104

MARIJUANA USE IN AMERICA

Y 4. J 89/1: 104/82

Marijuana Use in America, Serial No...

HEARING

BEFORE THE

SUBCOMMITTEE ON CRIME

OF THE

COMMITTEE ON THE JUDICIARY
HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTH CONGRESS

SECOND SESSION

MARCH 6, 1996

Serial No. 82

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Printed for the use of the Committee on the Judiciary

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MARIJUANA USE IN AMERICA

WEDNESDAY, MARCH 6, 1996

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON CRIME,
COMMITTEE ON THE JUDICIARY,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:30 a.m., in room 2237, Rayburn House Office Building, Hon. Bill McCollum (chairman of the subcommittee) presiding.

Present: Representatives Bill McCollum, Stephen E. Buyer, Howard Coble, Fred Heineman, Ed Bryant of Tennessee, Bob Barr, Charles E. Schumer, Robert C. Scott, and Sheila Jackson Lee.

Also present: Representative John Conyers, Jr.

Staff present: Paul J. McNulty, chief counsel; Glenn R. Schmitt, counsel; Daniel J. Bryant, assistant counsel; Audray Clement, secretary; Tom Diaz, minority counsel; and Melanie Sloan, minority counsel.

OPENING STATEMENT OF CHAIRMAN McCOLLUM

Mr. MCCOLLUM. The Subcommittee on Crime will come to order.

I, first of all, want to apologize for the lateness of this hearing this morning. We had some meetings on the terrorism bill which is coming to the floor next week and, quite frankly, I had to be a participant in those and I was not able to be here. So it, unfortunately, is the way Congress sometimes works, but particularly to the witnesses, I apologize for the delay in getting this hearing started.

The hearing of the Subcommittee on Crime this morning is going to discuss a very important topic: marijuana. After years of decline, marijuana use among the young has dramatically increased over the last 4 years. A recent national survey found that the number of 12- to 17-year-olds who smoked marijuana rose from 1.6 million in 1992 to 2.9 million in 1994. A 1995 survey found that one in three high school seniors had smoked marijuana within the last year, and that among 14- and 15-year-olds the number of recent marijuana users rose a staggering 200 percent from 1992 to 1994.

From 1992 to 1994 the percentage of juvenile offenders testing positive for marijuana use more than doubled in cities throughout the country, including Birmingham, Cleveland, Indianapolis, St. Louis, and Phoenix. These statistics, on just a moment's reflection, shock the conscience. They're simply overwhelming. For more than a decade marijuana use among the youth was declining, but numbers such as those I've recited tell a dark story of a dramatic rever-

sal in trends, a reversal that spells grave harm for the present and for the future.

In recent years there have been four significant changes regarding marijuana that should concern all of us. First, users are younger. In 1992 the average age of first-time marijuana users was 14 to 17; today the average age is 13 to 15. What was once rare is becoming commonplace, with 12- and 13-year-olds now regularly entering treatment centers.

Second, the typical marijuana dose today is significantly larger than in past years, with doses now often laced with other drugs. As a result, from 1993 to 1994, there was a 50-percent increase in the number of marijuana-related emergency room episodes for 12- to 17-year-olds.

Third, the potency of marijuana has increased substantially in recent years. According to the Drug Enforcement Administration, the THC content in marijuana has doubled in the last decade due to cloning and genetic manipulation.

And, fourth, the harmful effects of marijuana are now absolutely clear. Extensive studies of marijuana reveal many dangers associated with the drug, including the gateway effect. According to a study on Columbia University's Center on Addiction and Substance Abuse, 12- to 17-year-olds who use marijuana are 85 times more likely to use cocaine than those who abstain from marijuana. The study further reveals that 60 percent of adolescents who use marijuana before the age of 15 will later use cocaine, while 43 percent of teenagers who use marijuana by age 18 will later use cocaine.

Locally, school officials are pointing to the increased popularity of marijuana as the primary explanation for the skyrocketing number of students expelled from the Fairfax County school systems over the past 4 years here in Virginia. The number of expulsions has climbed from 16 in 1991 to 115 in 1995, a sevenfold increase.

I believe the explanation for marijuana's increased popularity is straightforward. America's younger generation today sees fewer risks and more personal rewards associated with marijuana use. I see evidence here of the same crisis of character resulting from the demise of families which is bringing us the soaring crime rates. Youth are seeing less risk in drugs for various reasons. Perhaps foremost among them is that condemning messages about drugs are too often being replaced with encouraging messages.

Tragically, many of our cultural institutions are no longer allies in stigmatizing drug use. Mass media and music groups are increasingly glamorizing drug use. Recently, during an episode of the hit show, "E.R.", the show's leading heartthrob, Dr. Doug Ross, took a puff from a marijuana joint after a long, difficult day. He was prevented from finishing his smoke by the cries of a drowning child whose life he then saved. The episode concludes with Dr. Ross as hero, a hero who chose to light a joint in the midst of difficulties and who experienced no adverse consequences because of his actions. On the contrary, after the puff came heroics. The messages sent by such pop endorsements of drug use are clear: drugs are cool; they help you relax; use them without consequences.

Make no mistake, when our cultural institutions advance such messages, they are aiding and abetting the emergence of a drug culture which offers despair and violence. We're reaping what we're

sowing. Marijuana use is being portrayed more and more as acceptable, if not glamorous. Is it any wonder that youth attitudes toward the drug have become more accepting? It is simply astounding that young people today are actually more likely to be aware of the dangers of cigarette use than marijuana use.

I believe the choice is clear. We can either take a moral stand now or let today's kids have their own epidemic and learn the hard way. Those who occupy the bully pulpits have the moral imperative to use them well. I trust that today's hearing will be one step among many that this Congress and all those in political leadership take during the months ahead to use our bully pulpits to declare, with a unified voice, that drug use is illegal, harmful, and unacceptable. Our incentive could not be greater.

The combination of deteriorating attitudes among youth regarding drug use and the projected increase in the number of violent juvenile offenders over the next 5 years will present our Nation with unprecedented challenges. This Congress must help to meet those challenges with smart actions and smart messages.

Mr. CONYERS. Mr. Chairman.

Mr. MCCOLLUM. Mr. Conyers, I do not see Mr. Schumer who I was about to recognize. Would you like to be recognized?

Mr. CONYERS. Yes, sir. I would like to make a few comments.

Mr. MCCOLLUM. Our ranking minority member of the full committee is recognized.

Mr. CONYERS. Thank you very much. And I appreciate Mr. Schumer for coming in after you've recognized me. [Laughter.]

First of all, I want to identify with you, as chairman of this subcommittee, about the importance of the subject that we are being called together to discuss. I think it's a very important one and I think that the statistics that you bring forward are irrefutable.

I would like to spend a moment on the culturally-accepted social stamp of approval that is being put on marijuana use and I'd like to draw that up, because the example of Chairman McCollum's was from television, and television and the movies are inextricably connected. Both of those industries are within the jurisdiction of this committee and I thank him for naming the program that this occurred on because I am personally offended, after years of fighting the drug battle, that now it seems to be OK.

And why is it OK? Because movies and television imply or make it clear that's OK. I hear policemen, officer after police officer, telling me they go to these rock concerts and that you can get a contact high. You don't even have to be near anybody smoking a joint; there are so many that have been smoked that everybody gets bombed whether you want to or not. All you have to do is buy a ticket. It's contact high.

Now either this country has got to bow down to the socially-acceptable use of pot and let's hang it up or we're going to have to do a lot more than we have. I remember this young girl, a movie star, a few years back, Mr. Chairman, who was advertising against not smoking, got stopped because traces of cocaine were in her purse when she went across to some place.

And then I've heard also that in Hollywood that there are a lot of places where these kinds of hearings are considered to be a joke. I mean, we're old fogies. "This is really out of step, Conyers." The

whole new thing is grass is cool; besides, they're so many worse drugs, but it is a gateway drug. And we can't deny it.

Final point, the medical crap around marijuana is getting a little bit offensive to me. There are medical uses for marijuana without question, Dr. Voth, and nobody will deny it. But for anybody not to know that if you're not using it for medically-prescribed circumstances by a physician, you are not being healthy or helping your health condition by using marijuana.

And I would like to encourage the physicians and the health industry in this country to lay to rest the baloney that smoking marijuana is not unhealthy. It's darn unhealthy. It's awful. It has tremendously bad effects, and the case has got to be made without question.

And I thank you for the opportunity to bring a few comments to this opening hearing.

Mr. MCCOLLUM. I thank you. I know that Mr. Schumer, the ranking minority member, has an opening statement. Does anybody on our side have anything they want to say?

Mr. Coble.

Mr. COBLE. No formal statement, Mr. Chairman. I'll be brief. You and the gentleman from Michigan have pretty well put your fingers on the pulse of the problem.

Unfortunately, today most Americans, when they hear the words "illegal drugs," they synonymously call to mind heroin and/or cocaine. Marijuana seems to be the forgotten drug. But you and the gentleman from Michigan have so aptly pointed out, Mr. Chairman, it is indeed not the forgotten drug; it's a plague. But as you pointed out, Mr. Chairman, it appears to be a very natural springboard for casual, cool marijuana to the more seriously addictive problem of heroin and cocaine.

And I hope that the hearing this morning will be revealing and illustrative to the problems, Mr. Chairman, and I thank you for calling the hearing.

Mr. MCCOLLUM. Thank you, Mr. Coble.

Mr. Schumer, do you wish to continue?

Mr. SCHUMER. Yes, and I would ask unanimous consent that my statement be put in the record.

It doesn't happen very often that the chairman and my former chairman, and now ranking minority member, agree so completely, so there's not much for me to say, unusual also. But, I'd make just one point, and that is I see we have Mr. Hedrick, who I've met with on numerous occasions, of the Partnership for a Drug-Free America, and you know the stuff that they did and the general ads against drug use, and particularly marijuana-type drug use, had enormous effect. It really did reduce usage tremendously.

Letting kids know that these drugs are bad and doing it in a way that is not, you know, just some leaflet that they won't read, but doing it as commercials on the television that they all watch, is really important. And that effort has decreased some, not because of Mr. Hedrick—they're pushing as hard as ever—but the networks who gave so much time and everybody else is a little less willing to do that now.

And I just hope we can get some focus back. This was not a governmental effort; it was a private sector effort by and large. It had

a real effect, particularly on entry-level users. And one of the reasons I think that marijuana use is back up is because our educational efforts are not as great as they were a few years ago. And so I hope we can all work together to bring those efforts forward again. With that, all the rest of it is in my opening statement and I'll just ask unanimous consent that it be put into the record.

[The prepared statement of Mr. Schumer follows:]

PREPARED STATEMENT OF HON. CHARLES E. SCHUMER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Thank you, Mr. Chairman. The problem of marijuana use in America is an important subject and I commend you for holding this hearing.

Nothing is more important to America's future than our children. And nothing hangs more heavily over our children than the evil of illegal drugs.

The traffic in illegal drugs has corrupted entire nations and bred a storm of violence on our streets. Illegal drugs are destroying lives, shattering families, and devastating entire neighborhoods.

The illegal traffic in marijuana is corrupting just as the traffic in cocaine, heroin, methamphetamine, LSD or any other illegal drug. It attacks the same values, corrupts the same institutions, and destroys lives in the same way that all these other drugs do.

While millions of lives are destroyed by drugs, a few ruthless people benefit from this devastation. These people bear direct responsibility for the plague of drugs in America. They are the drug lords in Colombia, the Mexican and other international criminal drug traffickers, the organized gangs in America, and the street level dealers.

The brunt of our efforts should be aimed at bringing these people to swift and certain justice and to disrupting their drug trade.

But some other areas of our society must also shoulder blame. The message that marijuana is not bad—indeed, that is somehow "hip" and even the right thing to do—has been oozing into our popular culture over the last decade.

This self-indulgent message has been growing louder in popular music, in television, in the movies, and elsewhere. We have heard this seductive message before about other drugs—that heroin was cool, and that cocaine was recreational. But we have seen the devastation those drugs still cause.

So we need to expose the message that marijuana is cool for the lie that it is. We need to criticize it. We need to do everything we can to stop it.

Now, some will say that we should just give up. Their answer to drug abuse is to legalize this drug or that drug . . . to lower the penalties for drug trafficking . . . and, ultimately, to simply accept the ravages of drugs as the cost of a supposedly free society.

I reject those arguments. Surrender is not in my vocabulary when it come to drugs. And most Americans, including most young people, agree. *Three is simply no wave of popular support for legalization of marijuana or any other illegal drug.*

The fight against drugs has never been easy. It never will be easy. There is no simple answer. There is only commitment and hard work.

Here are three basic things we must do: *First, we must not tolerate drug corruption in foreign governments.* A government that allows the illegal drug trade to flourish is killing Americans just as surely as a government that wages war on U.S. I am working on legislation to overhaul the means by which we review the conduct of foreign governments in the drug trade, and the tools we give the President to punish these governments when they are corrupt. I hope the distinguished chairman will join me in that effort.

Second, we must impose the strongest possible penalties on those who traffic in the poison of drugs. With the narrow exception of the "safety valve" for first time, nonviolent, low level offenders that I sponsored in the 1994 Crime Bill.

Third, we must expand; We must expand, not cut back Federal funding for drug prevention and drug treatment programs. It is penny-wise and pound foolish to be slashing these programs when all the evidence is that funding these programs is an investment this society must make.

Thank you, Mr. Chairman.

Mr. MCCOLLUM. Unless someone has a burning hole in their pocket—I see a couple of burning holes down here.

Mr. Heineman.

Mr. HEINEMAN. Thank you, Mr. Chairman. And thank you for bringing this to the floor of the subcommittee.

Unfortunately, we don't talk too much about this and after we talk about it we let it lay in the back of somebody's mind, until we put it out of our mind until we have a celebrated case, whether it be drinking, whether it be marijuana, whether it be similar to the one in California where a couple of months ago two kids blew themselves up in a trailer, two young kids, while mixing methamphetamines.

I came here from law enforcement. I was a police chief for 15 years in Raleigh, NC, and while I was in New York City as a lieutenant I commanded the narcotics squad. I've had intricate experiences in drug enforcement, and I see here a DARE officer coming here to testify, and we've dealt with DARE. And the kids today in high school and in college, and unfortunately we don't reach kids in high school and college as we do in the fifth grade with DARE, they see us not even talking about the issues; they see us not even huddling with those kids and asking them what goes on in school, what goes on in the parking lot on a Saturday night. We have to keep a full court press on this narcotics issue because these kids themselves want to be told, and when you don't give a damn, they don't give a damn.

I had, back in 1979, conducted an undercover operation in a whole county school system. And we took junior college students, technical school students, and put them into the school for 3 months as undercover agents. And we made a lot of arrests, 140 arrests, not of users, but of those that sold. And then after that was over and after the papers batted us from pillar to post, we got together, the superintendent and my department, and we said, "Hey, we can't let it stop at this level. We have to bring the parents in and we have to give them education on this." And we did.

We had a county of 150,000 people and we had 12 high schools and we had 12 seminars in 12 weeks. And out of 150,000 people, we had less than 800 people show up, 800 parents. And the kids see that and they just see we don't give a damn.

Mr. Chairman, we have to keep this on the forefront. Marijuana is a gateway drug, and it's a gateway drug to other experimentation. We at the Congress, somebody has to take the lead in this country as it relates to drugs. The police departments cannot do it. If the police departments could eliminate drugs, they would have been eliminated by now. It's up to the people in this country; it's up to the family to do that with their own kids. Every kid in school comes from a family. And it's up to you and me as parents to make sure we know what's going on. And it's got to be done in the church, and it's go to be done at home, and it's got to be done in the school. We can't do it. The cops can't do it.

The kids love these DARE officers. You should see them when they see their DARE officers at a public safety outing or something. They run up to them; they identify with them with a greater personal feeling than they do with their parents. They love their DARE officers. Ask your kids. Ask these youngsters who are here that have gone through the DARE program what they thought of their DARE officers. They want to be told; they want to be shown.

Unfortunately, when the fifth grade is over, we have nothing in high school, we have nothing in college, and there we go again folks. And, in fact, we even have people in academia telling us we need to decriminalize marijuana. That's foolish. It's foolish because we can get a hold of it. It's up to us. We can stop drug use in this country by Saturday morning. We can put every drug dealer in this country out of business by Saturday morning. All we've got to do is say no. It's in our hands. It's not in the hands of this Congress; it's not in the hands of the DARE officers, but it's in our hands to say no. Drugs are killing us.

Thank you, Mr. Chairman.

Mr. MCCOLLUM. Thank you, Mr. Heineman.

Mr. Scott, do you have any opening remarks this morning? Anybody else want to? Mr. Barr.

Mr. BARR. Thank you, Mr. Chairman.

I want to commend the chairman for pulling us together for this important topic. The chairman's and other statements this morning reflect a very accurate view, a very realistic view, that when the fight against mind-altering drugs—and marijuana is a mind-altering drug for heaven's sake; that's why people use it—when that gets off of the front pages, drug usage goes up and it gets on the front pages. We have got to stand up, not just today, Mr. Chairman, but hopefully initiate a process that continues indefinitely into the future of highlighting this problem, highlighting the destructive nature of all mind-altering drugs, including marijuana.

And I'm going to look forward, Mr. Chairman, to see whether these folks I see here today from NORML, and I presume the criminal defense lawyers and maybe somebody from Buckley's group here, are going to talk about how great marijuana use is. I want to see if they can really do this with a straight face. Apparently, they can't because I already see them smiling about it. When they say—and I'm reading this very humorous document here, the testimony of Keith Stroup from NORML—that marijuana usage is not only less harmful than tobacco, but far less harmful than tobacco, nobody can say that with a straight face.

They can't because they're smiling right now. This is absolutely absurd and I'm glad they're saying it because it destroys the credibility of everything else that they're trying to say. And then you read further in this absurd document, you see that what they're talking about is standards of courtesy for proper marijuana usage.

Thank you, Mr. Chairman, for highlighting this, and thank you, NORML, for highlighting such an absurd philosophy that even you can't talk about with a straight face. Thank you, Mr. Chairman.

Mr. MCCOLLUM. Mr. Bryant.

Mr. BRYANT OF Tennessee. Thank you, Mr. Chairman.

Today we find ourselves engaged in a discussion of a drug which has in years past plagued many parts of American society. It's marijuana. Regrettably, we're not here to make a claim that marijuana use, or the usage of many other illicit drugs for that matter, is down. As the father of two teenaged children, that disturbs me, Mr. Chairman. I'm disturbed because marijuana use within the past 2 to 3 years is on the rise, particularly among younger Americans.

The numbers speak for themselves. In 1992 the number of 12-, 13-, 14-, 15-, 16-, and 17-year-old youths who consumed marijuana was approximately 1.6 million. Yet only 2 years later, for the same age group, just under 3 million young Americans had used marijuana. The likelihood for the kids who begin their journey into full-blown drug use by smoking marijuana, that likelihood that their lives will become further entrapped in the tragic and oftentimes inescapable, and for some even deadly, web of the illicit drug culture is alarmingly staggering.

Kids who smoke marijuana are 85 times more likely to resort to cocaine somewhere down the road in their lives when compared to kids who don't smoke marijuana. It goes without saying that if you smoke marijuana at an early age, cocaine isn't the only drug you're likely to try. Other drugs like LSD or methamphetamine will certainly tempt you as well.

Why have our young people become the victims of marijuana in recent years? I would say that in large part the answer is twofold. First, it is apparent that our youth aren't viewing marijuana as a dangerous drug, which it is. And, secondly, this administration's policies to fight drugs have been lackluster at the very best.

Somewhere along the way within the past couple of years, America's young have come to believe that marijuana is no longer a threat to them. The University of Michigan study supports this. The study found that in 1992, 70 percent of the high school seniors it surveyed disapproved of even trying marijuana—70 percent. Yet in 1994, 2 years later, that same survey found that 58 percent of those seniors surveyed felt the same way, a 17-percent drop in the opinion that marijuana shouldn't be tried.

Let's be openly frank here. Most kids, when they take their first hit of marijuana, don't realize that the likelihood of them falling into the trap of using other drugs becomes greater. So the question thus becomes: Why are kids beginning to view marijuana as more acceptable to use? Why are they no longer fearing its potentially devastating effects? How, in the span of only 2 years, has the opinion of marijuana use among our youth shifted so dramatically, 17 percent for the worse?

I think many of us agree here today that the problem by and large is a direct product of a pathetically, poorly-planned policy to fight drugs on the part of this administration. Since this administration came into power, the tactic toward drug enforcement has drifted away from some of the most effective drug enforcement policies we've had, such as interdiction. Instead we're choosing to focus the Federal Government's resources to fight a war on drugs by embarking upon a policy whose roots were founded in the liberal notion of what arguably amounts to nothing more than tolerance.

Any policy which states, and I will quote directly from the President's drug strategy, that "the Nation must utilize every opportunity to get chronic, hardcore drug users into treatment," while at the same time reducing interdiction personnel and equipment integrally as crucial to stopping drugs from coming into the country at our borders, certainly appears to be a policy of tolerance to me. It should come as no surprise that resulting from this passivity has been a decline in the number of drug cases which have been prosecuted at the Federal level. From 1992 to 1994 there has been a

12-percent drop in Federal drug prosecutions. I can tell you that if the Federal Government isn't prosecuting drug cases, it's certainly not because there's no longer a drug problem on our streets or that the Federal Government doesn't have jurisdiction.

It certainly appears to me that the attention of this Nation's drug problem as far as this administration is concerned has lessened and has shifted disproportionately to other types of programs, such as treatment. I'm further disturbed, Mr. Chairman, when I read and hear the reports that this administration is on the verge of transferring aid to Mexico despite the fact that there is evidence suggesting that that country is not being as cooperative as it should be in assisting us in the fight against drugs. We believe now that there are more drugs coming in through the pipeline in Mexico than ever, and that's probably the most popular way that it's coming in.

Mexico must help us, must live up to its end of any agreement which we have with that country which was made before with us. I do believe that if this administration would shift more resources toward interdiction and fighting the problem at the source, at our borders and on the streets, than we certainly wouldn't be headed toward another potential drug epidemic.

And I thank you, Mr. Chairman.

Mr. MCCOLLUM. Thank you.

I'd like to introduce our panel of witnesses at this point in time. I know you've been very patient today. The first witness is Dr. Eric Voth, chairman of the International Drug Strategy Institute and assistant professor of medicine at the University of Kansas. He is the former medical director of St. Francis Chemical Dependence Services of Topeka, KS, and is recognized as an international authority on drug abuse. Dr. Voth has testified before the Drug Enforcement Administration in opposition to the rescheduling of leaf marijuana, and has debated drug policy throughout the country. He has appeared on television and is a regular consultant to USA Today and other national media organizations.

The second member of the panel is Ms. Stephanie Haynes. Ms. Haynes is president of the Drug Watch International, a worldwide drug prevention advocacy organization. She is actively involved in drug prevention at the local, State, and National levels and is a frequent speaker at conferences, workshops and community meetings for adults and youth on the topic of drugs. Ms. Haynes was formerly chairman of the board of the Texans' War on Drugs, a statewide drug prevention organization. In 1987 she was appointed as legislative chairman of the Texas Governor's Task Force on Drug Abuse. She has recently been appointed to the Texas Commission on Alcohol and Drug Abuse by Gov. George Bush.

Our third witness is Officer Donald Hayes. Mr. Hayes is a 15-year veteran in law enforcement, currently assigned to the Drug Awareness and Resistance Education Division, which is DARE that Congressman Heineman referred to earlier, of the city of Alexandria, VA, Police Department. Before entering law enforcement, Mr. Hayes served as a sergeant in the U.S. Air Force. He's married with two children and resides in Alexandria, VA.

And our final witness on this panel is Tom Hedrick, vice chairman of the Partnership for a Drug-Free America. Mr. Hedrick has

been with the partnership since 1986 and has spoken and written widely about the illicit drug problem and the importance of changing attitudes to reduce demand. He is currently director of the Greenwich Council on Youth and Drugs, and the Connecticut Communities for Drug-Free Youth.

I think I'll just go in the order I introduced you, if I could. Dr. Voth, if you could proceed, we have your full statement. You may summarize or present what portion of it you wish, and I'll say that to all of the panel. Your complete statements, without objection, are now admitted into the record, so you may feel free to present some summarized version. Dr. Voth.

STATEMENT OF ERIC A. VOTH, M.D., CHAIRMAN, INTERNATIONAL DRUG STRATEGY INSTITUTE, AND ASSISTANT PROFESSOR, UNIVERSITY OF KANSAS MEDICAL SCHOOL

Dr. VOTH. Chairman McCollum, I'm very appreciative of the comments of the subcommittee today and I hope to expand your knowledge base a little because it's not a very simple problem. We're going to examine the recent rise in the use of marijuana and the impact on the health and welfare of society as well as some potential solutions.

As you have discussed, marijuana use is up. It had peaked in 1978 when about 50 percent of high school seniors had used marijuana in the prior year and about 10 or 11 percent had used it daily. It dropped until 1992 when about half that many were using every year and about 2 percent were using daily. But then some things really began to change. The national antidrug message became softened; there was less focus placed on drug use, but beyond that, the pro-marijuana movement markedly changed its strategy for gaining acceptance and legalization of marijuana. After multimillion-dollar contributions, the pro-marijuana lobby cleaned up its act, learned to deliver a respectable message that marijuana was acceptable. They used consultants and found messages that the public didn't understand, but which helped them gain public acceptance, including the acceptance of young people.

Assisting in that effort to soften drug policy, billionaire George Soros gave $12 million to the Drug Policy Foundation, the Lindesmith Center, and Drug Strategies to help finance the exploration of what were called "alternative" drug policies. These became a euphemism for legalization, decriminalization, and harm reduction policies.

One of the major misinformations that will undoubtedly be set forth today is that millions of innocent people are in prison because of marijuana use. The fact is that only 0.4 percent of State inmates are incarcerated for marijuana possession; the rest of the drug inmates are in because of trafficking. Only 2 percent of Federal offenders are in for possession of any drug, including cocaine.

All other drug-related inmates are incarcerated for trafficking. In fact, the average Federal marijuana inmate was involved in trafficking 3.5 tons of marijuana. Steadily the message has gotten out to young people that marijuana is not such a bad thing, and thus you now see 4.6 percent of high school students using it daily. The public might ask a simple question: Why does this matter? But the simple answer is marijuana is a harmful drug of abuse; it is clearly

addictive; it causes difficulty with memory and cognitive functions, causes personality changes, creates abnormalities in the lungs, abnormalities in unborn, residual effects on fetuses after birth, and suppression of the immune system.

Although the use of marijuana is harmful in its own right, and I would emphasize that, there is no question that marijuana is a gateway drug to other drugs of abuse. The earlier that a young person uses, the more likely they are to continue using. The pro-marijuana movement continues to deny the existence of the harms of marijuana. For leaders of the marijuana movement to state that marijuana is virtually harmless is irresponsible and destructive, and it is the misrepresentation of scientific findings which has further led to the increased acceptance of drug use.

There are three major pro-drug strategies to soften drug policy that you should be aware of. These include the medicinal marijuana issue, the industrial hemp issue, and the move to decrease mandatory minimum sentences. Former directors of the National Organization for the Reform of Marijuana Laws have considered these issues to be pivotal to be able to gain general legalization of marijuana by 1997.

Let's consider the medicinal marijuana briefly, and I can discuss it more indepth later. Since the 1970's, it has completely been driven by the pro-drug movement. NORML was one of the initiators of the medicinal marijuana movement. Congressman Barney Frank has sponsored legislation to allow physicians to prescribe it. Dr. Lester Grinspoon, who is a physician and leader of the National Organization for the Reform of Marijuana Laws, has characterized marijuana as a relatively safe cure-all. This represents either an ignorance of the medical literature or a malicious disregard for it; he and I have debated that on a national level. Supporting the use of marijuana as a crude smoke drug for medicinal purposes is really similar to supporting tobacco for weight or anxiety control.

I've provided you with a detailed analysis of the medical marijuana issue. Realize that no reputable medical entity considers smoking a drug, smoking marijuana, as a viable medicine. THC in any form is considered a last choice of physicians for the treatment of their patients, and the main active ingredient, THC, is available in an oral form and could easily be reformulated into a suppository or nasal spray, if it were necessary for people that couldn't have oral medicines.

Lastly on that issue, the U.S. court of appeals has recently struck down the notion of marijuana as a medicine. You'll hear quotations about a Judge Young decision; however, as related to this overall decision, the appeals were struck down in the District of Columbia.

The hemp issue has surfaced as a means to gain acceptance of marijuana. Numerous States have seen hemp legislation introduced and I've discussed that in my written testimony.

Lastly, the Crime Subcommittee has recently accepted the recommendations of the Sentencing Commission to change mandatory minimums and also to reduce the weights of definition of marijuana plants to 100 grams for sentencing. These recommendations have been traced back and heavily influenced by the pro-drug organizations and witnesses. Most mature plants of marijuana average

275 to over 3,000 grams. Reducing sanctions on marijuana will not reduce crime.

Holland is held out as a model of a country that's reduced sanctions, but what has actually happened there? From 1984 to 1992 marijuana use among young males increased by 277 percent. A recent study has shown from 1990 to 1995 marijuana has increased from 7 to 17 percent. Shootings there have increased 40 percent; thefts are up 62 percent; holdups are up 69 percent. From 1991 to 1993 marijuana addicts have risen by 49 percent in Holland.

In the United States, a recent study of homicides has found that 75 percent of offenders felt they were under some influence of marijuana at the time and 7 percent felt that homicide was directly related to their use of marijuana. The United States cannot afford such experiments.

Now the danger of all these smokescreens is that young people start to carry these banners. In every school that I've spoken students argue with me about medical marijuana and hemp, not the dangers of marijuana. My oldest sons ask me about the medical applications of marijuana, and yet with the millions of dollars we've spent on research and the thousands of studies that are in the medical literature, our youth is unaware of these findings.

To turn the tide on this problem we must create a strong, unified national attitude and voice an opposition to drug use. Prevention efforts must be strengthened along with treatment, rigorous interdiction, and user accountability. The harmful effects of all forms of drug use must be disseminated widely. Drug screening has been a proven effective intervention in business and industry as well as the military and I support expanding it widely, including in schools. Currently, we deal with head lice and measles more aggressively than we deal with drugs.

We need to publicly expose, and this is a good step, the self-serving interests and propaganda of the pro-marijuana movement which seek to gain acceptance and legalization of marijuana through deception and misinformation. As a good example of what is going on, I received over the Internet an update, which all of you have copies of, from the Marijuana Policy Project, announcing this hearing and recommending that people contact you all to pressure you to not increase mandatory minimums. And this is a good example of one of the ways that we are being manipulated by the pro-drug lobby.

I appreciate the time and would be happy to answer any questions now or later. Thank you.

[The prepared statement of Dr. Voth follows:]

PREPARED STATEMENT OF ERIC A. VOTH M.D.,[1] CHAIRMAN, INTERNATIONAL DRUG STRATEGY INSTITUTE, AND ASSISTANT PROFESSOR, UNIVERSITY OF KANSAS MEDICAL SCHOOL

Congressman McCollum, members of the House, we are here today to examine the issues leading to the recent rise in the use of marijuana, reasons for this increase,

[1] Dr. Voth is Chairman of the International Drug Strategy Institute and is the former medical director of the St. Francis Chemical Dependence Services in Topeka Kansas. He serves as a member of the board of directors of Drug Watch International, is the medical advisor for the National Family Partnership, serves as an advisor on alcohol and drug abuse issues to the Kansas State Board of Healing Arts. He has advised the Reagan, Bush, and Clinton administrations on drug policy as well as numerous Congressional offices, and has served as a consultant to the Presidential Commission on AIDS, testified for the DEA in opposition to the rescheduling of leaf

the impact on the health and welfare of our society and to examine some potential solutions.

After a peak in marijuana use around 1978 when 50.2% of high school seniors used marijuana in the prior 12 months and 10.7% used it daily, marijuana use dropped to 21.9% having used in 12 months and 1.9% using daily in 1992. At about that time several things changed. The national anti-drug message became softened, legs focus was placed on drug use, and the pro-marijuana movement changed its strategy for gaining acceptance and legalization of marijuana (attachment 1). After multimillion-dollar contributions, the pro-marijuana movement cleaned up its act, learned to appear respectable, and set about delivering a message that marijuana use was acceptable. They used media consultants and found messages that the public little understood but which helped gain public acceptance. The three major strategies surrounded medicinal marijuana, industrial hemp, and decreases in mandatory minimum sentences. One of the major misinformations set forth by the pro-marijuana lobby is that millions of relatively innocent marijuana users are imprisoned each year. The fact is that only 0.4% of state inmates are incarcerated for marijuana possession and only 2% of federal offenders are incarcerated for general possession of any drug. All other inmates are incarcerated for trafficking. In fact, the average federal marijuana prisoner was involved trafficking 3.5 tons of marijuana (attachment 2).

Billionaire George Soros has given twelve million dollars to the Drug Policy Foundation, the Lindesmith Center, and Drug Strategies to help finance the exploration of "alternative" drug policies. This became a euphemism for legalization, decriminalization, and harm reduction policies. Steadily, the message got out to young people that marijuana was not such a bad thing and thus you now see 4.6% of high school seniors using it daily with drastic increases each year.

The public might ask why this is significant. The answer is simple: Marijuana is a harmful drug of abuse. It is addictive, it causes difficulty with persistent memos and cognitive functions, causes personality changes, creates abnormalities in the lungs, abnormalities in the unborn. residual effects on fetuses exposed in utero, and suppression of the immune system (attachment 3). Although the use of marijuana is harmful in its own right, there is no question that marijuana is a gateway drug to other drugs of abuse The earlier that youth use the drug, the more likely they are to become dependent upon it. Tobacco and alcohol are two other gateway drugs.

These facts were not known in the 1970's so in some ways the acceptance of the drug at that time was understandable. The pro-marijuana movement continues to deny the existence of the harms of marijuana. For leaders of the pro-marijuana movement, some of whom are physicians. to state that marijuana is virtually harmless is irresponsible and destructive. It is that misrepresentation of scientific findings which has further led to the increased acceptance of drug use.

The pro-marijuana movement has pushed for the medicinal use of marijuana. Congressman Barney Frank has sponsored legislation to consider allowing marijuana as medicine. Dr. Lester Grinspoon, a physician and leader of the National Organization for the Reform of Marijuana laws has characterized marijuana as a cure-all, and as one of the safest drugs around. This represents either an ignorance of the medical literature or a malicious disregard for it. Supporting the use of marijuana as a crude, smoked drug for medicinal purposes, is similar to supporting tobacco for weight or anxiety control. I have prodded a detailed analysis of the medicinal marijuana issue (attachment 4). No reputable medical entity considers smoking marijuana as a viable medicine. Furthermore, the main active ingredient THC is available for oral prescript on for patients. It would be a simple matter to reformulate it into a nasal spray or suppository. Recently, the United States Court of Appeals for the District of Columbia struck down the notion of marijuana as a medicine. Remember that the pro-marijuana forces have completely driven the medical marijuana issue. The executive director of NORML stated that the medicinal marijuana issue was pivotal to the legislation of marijuana by 1997.

The hemp Issue has also surfaced as a means to gain acceptance of marijuana (attachment 5). Numerous states have seen hemp legislation introduced. Colorado and Kentucky are examples. In Colorado, the proposed legislation allows hemp growers to be visually self-regulating. It provides for a specific maximum THC content, but creates no way to verify the content. Furthermore, hemp licenses can only be removed after repeated offenses. The pro-marijuana lobby wants the legalization of the entire plant, not simply the stalk of the plant.

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marijuana, and is recognized as a international authority on drug abuse. Activities of national prominence include appearance on the Tom Snyder show, presentations at numerous national medical events, consulting to numerous international drug prevention organizations, and regular consultation to USA Today Newspaper and to other prominent media.

The danger of all of these smokescreens is that young people start to carry the banners themselves. In every school in which I have spoken, students are conversant with the medical marijuana and hemp issues. My own son has asked me about marijuana's medicinal uses. Yet, with the millions of dollars we have spent on research and the thousands of studies in the medical literature, our youth are relatively unaware of the risks of marijuana. It is critical that youth education efforts make this information available to young people.

While some people contend that decriminalizing marijuana would reduce crime, Holland has seen the negative effect of soft marijuana policy (attachment 6). From 1984 to 1992 use increased among males age 12–18 by 277%. From 1990–1995, those age 11–18 who ever used the drug increased from 7–17%. Shootings have increased 40%, car thefts are up 62%, and holdups are up 69%. From 1991–1993 there was a 49% rise in registered marijuana addicts. In the United States, a recent study of homicides has found that 75% of offenders felt that they were under some influence of marijuana and 7% felt that the homicide was directly related to their use of marijuana. The United States cannot afford experiments which soften sanctions on marijuana use.

To turn the tide on this problem we must create a strong, unified national attitude and voice in opposition to drug use. Prevention efforts must be strengthened along with treatment, rigorous interdiction, and user accountability. The harmful effects of all forms of drug use must be widely disseminated to our young people in an unequivocal manner. Drug screening has been proven effective in reducing drug use in business and the military and should be widely expanded including in schools. Such programs should have a rehabilitative approach, yet carry the threat of punishment for continued use.

Without strong intervention upon the marijuana problem, we will see another generation lost to drug use.

THE RELATION OF PRO-DRUG LOBBYING TO DRUG USE RATES-VOTH

PERTINENT DATES AND EVENTS:

DEC.1987-DRUG POLICY FOUNDATION FIRST MEETING

1988 YOUNG DECISION ON MEDICAL MARIJUANA

1989-RICHARD DENNIS GAVE $2MILLION TO DPF TO LEGALIZE DRUGS - $100,000 TO KURT SCHMOKE FOR DRUGPEACE AWARD

1990-NOV. DENNIS WROTE "ECONOMICS OF LEGAL DRUGS" IN ATLANTIC MONTHLY

1991-APPEAL IN MEDICAL MARIJUANA CASE DOBLIN AND KLEIMAN SURVEY-EXTENSIVE PUBLICITY

BUSINESS ALLIANCE FOR COMMERCE IN HEMP INFORMATION-ENVIRONMENTAL CLAIMS
THE EMPEROR WEARS NO CLOTHES-BY JACK HERER

NOV 92-***
DRUG POLICY FOUNDATION MEETING ON MEDIA STRATEGIES & COMMITMENT TO PR AND MEDIA CAMPAIGN-ADVICE ON HOW TO USE MEDIA.

MASSIVE INCREASE IN MEDIA INFORMATION AND TALK SHOW APPEARANCES

1993- GRINSPOON BOOK AND NUMEROUS MEDIA APPEARANCES-DPFCONFERENCE HIGHLIGHTS THAT IF SOROS MONEY COMES THROUGH, MORE GRANTS TO MAYORS AND MEETINGS ON CAPITOL HILL
ELDERS-WIDELY QUOTED BY PRO-DRUG GROUPS

1994- MAY-ARTICLE IN ROLLING STONE OUTLINING SUPPORT FOR LEGALIZATION
JULY SOROS GAVE $6MILLION TO DPF

DRUG USE RATES: MARIJUANA

1978-SENIORS LAST 12 MOS-50.2%
LAST 30 DAYS-37.1%
DAILY-10.7%

1986-SENIOR POT LAST 12 MOS-39%
LAST 30 DAYS-23.4%
DAILY-4.0%
EIGHTH GRADE

1987-SENIORS LAST 12 MOS-36%
LAST 30 DAYS-21%
DAILY-3.3%
EIGHTH GRADE

1988-SENIORS LAST 12 MOS-33.1%
LAST 30 DAYS-18%
DAILY-2.7%
EIGHTH GRADE

1991-SENIORS LAST 12 MOS-23.9%
LAST 30 DAYS-13.8%
DAILY-2.0%
EIGHTH GRADE-6.2%

1992-SENIORS LAST 12 MOS-21.9%
LAST 30 DAYS-11.9%
DAILY-1.9%
EIGHTH GRADE LAST 12 MOS-7.2%

1993-SENIORS LAST 12 MOS-26%
LAST 30 DAYS-15.5%
DAILY-2.4%
EIGHTH GRADE-TRIED IN LAST YR9.2%

1994-SENIORS LAST 12 MOS-30.7%
LAST 30 DAYS-19%
DAILY-3.6%
EIGHTH GRADE-TRIED IN LAST YR 13%

VOTH - ATTACHMENT -

Subj PAE REPORT preview
Date Wed. Oct 18. 1995 6 02 PM EST

PAE REPORT preview

The Success of Tough Drug Enforcement

Strong drug enforcement in the United States is correlated with reductions in crime, drug use, and drug addiction growth rates The impact of tougher drug sanctions has been overshadowed by a prevalent myth that U.S. drug enforcement has become etoo punitive' or is a failed approach that should be replaced with a epublic health' strategy by diverting enforcement resources into treatment programs

This myth has been packaged and promoted by the multi-million dollar pro-drug legalization lobby, civil libertarians, and misguided academic researchers to the media and public with limited critical review and challenge Historical experience warns that weakening drug enforcement leads to increased societal costs and problems

Attacks on drug enforcement efforts often hold law enforcement to impossible and changing performance standards Law enforcement, treatment and prevention complement one another None of the credit for a dramatic twelve year decline in drug use among our children is attributed to law enforcement, yet recent increases in drug use are cited as evidence of enforcement's failure

The Slough of Drug Permissiveness

The prevailing myth is that the U S has taken a progressively tougher drug enforcement stance for the past 30 years and that this epunitive' approach has not been successful or beneficial

The basic premise that the U.S has taken a progressively more punitive policy on drugs is inaccurate and based on faulty measures When etoughness' is re-defined from arrest and incarceration numbers to reflect the proportion of drug arrestees actually incarcerated. one finds that the nation entered a period of drug permissiveness beginning in 1960 and ending in 1980

It is during this period of drug permissiveness and weak punitive sanctions that a dramatic rise in crime and violence swept across America The decline in drug offender incarceration rates was steep and sudden In 1960, the incarceration rate for drug offenders was over 90 per 1000 arrests. by 1980 that figure reached a low point of only 19 of every 1000 offenders being incarcerated

As drug incarceration rates fell 374% from 1960-1980

Serious crimes increased 215%, on average up 11% per year
Property crime increased 210 %, on average up 11% per year
Violent crime increased 252%, on up average 13 % per year
Drug use among teens (% who use) climbed 27% from just 1974-1980
Murders increased 100%, an average 5 % per year
Burglary increased 230 %, an average 12 % per year
Drug addiction rates also rose, with heroin use climbing 900%

As drug incarceration rates rose 447% from 1980-1994

Serious crimes declined 8%
Number of teens who used drugs declined 193%
Property crime declined 12 %
Murders declined 7%
Burglary declined 35%
Violent crime rate growth slowed from 13 to 2% per year
Heavy cocaine use fell 11% and heavy heroin use 17% from 1988

The entire 215% rise in crime rates experienced during the past three decades in the U.S. transpired when drug incarceration rates fell below the 1960 level during a period of declining incarceration rates for drug offenders This permissive period also is correlated with rising drug use
PAE Reports preview - Success of Tough Drug Enforcement
Page 3

Historical experience indicates that arresting drug offenders is not an effective policy, offenders have to be incarcerated and risk facing consequences to have an impact It is only when the U.S abandoned a permissive treatment dominated drug policy that the growth in drug use and crime was abated

The Impact of Increasing Drug Incarceration Rates

The peak year for murder and property crime in the U S was 1978-1980 Drug incarceration rates reached their lowest ebb during these years After 1980, crime rates began to stabilize and have declined overall as drug incarceration rates increased It was not until 1990, that drug incarceration rates reached the level the nation was at in 1960 The crime rate began falling again in 1992, as drug incarceration rates reached record levels Estimates for 1994 are that violent crime dropped another 4% and murder, rape, and burglary dropped 5%

U.S police chiefs believe that the number one way to reduce crime is to reduce drug use The imposition of mandatory minimum drug penalties in 1988 was followed by the nation's largest decrease in drug use The proportion of murders related to narcotics also has fallen with tougher drug sentencing practices and the imposition of mandatory minimum laws

Young black males are seven times as likely to be murdered as their white counterparts This racial discrepancy rose during the drug permissive 1970's and peaked in 1972, when black males were more than 11 times as likely to be murdered than white males

Are We Tough Enough On Drugs?

Myth Too many non-violent first time minor drug offenders are in prison.

FACT The most comprehensive study ever of U S prisoners by the U.S Department of Justice found the following

1 93.5% of state prisoners were either violent or repeat offenders. two thirds are currently in prison for a violent crime (violent crime makes up only 9% of all crime)
2 Only 1 3% of state drug prisoners are not repeat or violent offenders of the 6 5% in this category
3 Only .6% of state prisoners were in prison for marijuana possession (with unknown quantity) and only 2% were in for marijuana trafficking
4 In federal prison the average amount of marijuana a trafficker was involved with was 3.5 tons and cocaine traffickers averaged 183 pounds of cocaine
5 Only 1.3% of federal prisoners are in prison for drug possession charges (average pot possession is 105 pounds)
6 A large number of federal prisoners are aliens and their prior criminal record may not reflect their entire criminal history

Myth Drug arrests are increasing and threaten to overwhelm the criminal justice system if alternatives to the criminal justice approach are not undertaken

FACT Drug arrests are declining and the criminal justice is not about to be overwhelmed by drug cases

1 Drug arrests have been decreasing since 1989 and only make up 8% of all arrests nationwide
2 Federal prosecutors have declined to prosecute an increasing proportion of drug cases
3 Alternative sentences are being used and growing
3 Court caseloads for drug offenses have declined the past few years and court and prison staff have generally kept pace with increased drug caseloads
4 Decriminalization would result in more drug related arrests alcohol related arrests far outnumber drug arrests, with more teens arrested for underage drinking than drug offenses

Myth Drug sentences are too harsh and mandatory minimums should be repealed

FACTS Drug incarceration rates plummeted through 1980 and stronger incarceration and mandatory minimum terms are the result of public

demanded. There is evidence that drug sentencing is still inadequate

1. Despite lengthy terms on paper, the average federal drug possessor imprisoned served only 8 months
2. Those convicted of a federal drug possession offense were less likely to be incarcerated than those convicted of liquor law or motor carrier regulatory violations.
3. The proportion of drug offenders who are traffickers has increased as drug possession convictions and incarceration declined since the late 1980's.

PAE Reports. The Success of Tough Drug Enforcement exposes many of the myths and misunderstanding about the impact of tougher drug enforcement and warns against turning back to the drug permissive policy of the 1970's. The report covers in detail, the success of mandatory minimum terms, the truth about race and drug laws, the increased efficiency and effectiveness of drug enforcement agencies. actual sentencing practices, drug treatment through tough drug policy. and the facts behind murder, youth violence and drugs.

This report includes presentation ready graphics, numerous charts and tables, and extensive original source citations. To order a full copy of this report, fax, mail, or call in your order on the enclosed order form, ($20 per report) or contact PAE directly at

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Current Aspects of Marijuana

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Original Contributions

The Residual Cognitive Effects of Heavy Marijuana Use in College Students

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Objective.—To assess whether frequent marijuana use is associated with residual neuropsychological effects.

Design.—Single-blind comparison of regular users vs infrequent users of marijuana.

Participants.—Two samples of college undergraduates: 65 heavy users, who had smoked marijuana a median of 29 days in the past 30 days (range, 22 to 30 days) and who also displayed cannabinoids in their urine, and 64 light users, who had smoked a median of 1 day in the last 30 days (range, 0 to 9 days) and who displayed no urinary cannabinoids.

Intervention.—Subjects arrived at 2 PM on day 1 of their study visit, then remained at our center overnight under supervision. Neuropsychological tests were administered to all subjects starting at 9 AM on day 2. Thus, all subjects were abstinent from marijuana and other drugs for a minimum of 19 hours before testing.

Main Outcome Measures.—Subjects received a battery of standard neuropsychological tests to assess general intellectual functioning, abstraction ability, sustained attention, verbal fluency, and ability to learn and recall new verbal and visuospatial information.

Results.—Heavy users displayed significantly greater impairment than light users on attentional/executive functions, as evidenced particularly by greater perseverations on card sorting and reduced learning of word lists. These differences remained after controlling for potential confounding variables, such as estimated levels of premorbid cognitive functioning, and for use of alcohol and other substances in the two groups.

Conclusions.—Heavy marijuana use is associated with residual neuropsychological effects even after a day of supervised abstinence from the drug. However, the question remains open as to whether this impairment is due to a residue of drug in the brain, a withdrawal effect from the drug, or a frank neurotoxic effect of the drug.

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DURING the last 30 years, more than 40 studies have examined the residual effects of cannabis on neuropsychological performance. We have reviewed these studies in detail previously.[1] Most of the studies produced positive results, but many failed to find residual impairment in cannabis users. These inconsistent findings may reflect several methodological difficulties. First, the term *residual effect* is ambiguous. It may refer to impairment simply due to a drug residue of cannabinoids lingering in the central nervous system (CNS) after acute intoxication has subsided, or it may refer to actual CNS damage that persists even after the drug residue has vanished. Most studies do not distinguish between the concepts of drug residue and CNS alteration effects in their analyses.[1]

Second, it is difficult to quantify the total amount of cannabis ingested by the subjects under study. This problem is minimized in laboratory studies, in which a known amount of cannabis or its active principle, tetrahydrocannabinol, is administered to subjects, followed by testing at various time points after ingestion.[1,2-5] However, this design cannot assess the residual effects (in both senses of the term) of months or years of daily cannabis use. Naturalistic studies of actual users avoid this limitation,[1,6-11] but some of these studies have examined users without a strictly supervised period of abstinence before testing.[8,11] Lacking such supervision, it is possible that some users arrived for testing only a few hours after last using the drug; therefore, some test results may have reflected the effects of acute intoxication rather than residual effects.

Third, comparisons of cannabis users with nonusers may be influenced by confounding variables. Of particular importance is the possibility that users might have been more impaired than nonusers on neuropsychological functioning even before they began to use cannabis. Only one previous, recent study has thoroughly controlled for such premorbid differences.[11] Other potential sources of confounding include the possibility that heavy cannabis users might display greater rates of premorbid psychopathology or more frequent use of other drugs than controls. Also, evidence suggests that heavy users of cannabis are disproportionately male,[1] yet we are aware of only one study that has matched users and nonusers on sex[11] and of no study that has analyzed the residual effects of marijuana in men and women separately.[1]

For editorial comment see p 560.

One way to reduce the influence of confounding variables, at least to some extent, is to compare heavy cannabis users against a control group of light cannabis users rather than a control group of nonusers. Infrequent users might be expected to differ less from heavy users on some possible confounding variables than would control subjects who had never used cannabis at all, while still differing sharply from heavy users on the specific variable chosen for study, namely extent of recent cannabis use. We used this design, together with additional methodological strategies to address the problems discussed above, to test the hypothesis that frequent marijuana use might produce residual neuropsychological effects in college students.

METHODS

Subjects

From mid 1991 to late 1993, we advertised in student newspapers at colleges in the Boston, Mass, area for students who had smoked marijuana for at least 2 years and who were willing to

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participate in a 24-hour study for $150 compensation. This study was approved by the McLean Hospital Institutional Review Board. Our advertisement indicated that students were eligible whether they smoked marijuana frequently or only occasionally. All respondents were then screened on the telephone by the principal investigator, who assured them of the confidentiality of their responses and then asked a series of 15 questions about marijuana and other drug use. In fact, only one of these questions, the number of days of marijuana smoking in the past month, was used to select subjects; all other questions were designed simply to mask the actual selection criterion of the study. By this method, we reduced the risk that students might guess the selection criterion and then misrepresent their extent of marijuana use to gain entrance to the study.

Only subjects reporting regular marijuana use (a minimum of 22 days of the past 30 days) and subjects reporting only occasional use (a maximum of 9 days in the past 30 days) were accepted for the study. During the actual recruitment process, we attempted when possible to obtain subjects at the highest and lowest ends of the frequency range, so that in practice most of the heavy users recruited had smoked at least 27 days in the last 30 days, while most light users had smoked no more than 3 days. We also attempted to keep the groups approximately balanced for sex by temporarily rejecting candidates of one sex if a surplus of that sex developed. Rejected callers were simply told that they were ineligible for unspecified reasons.

Study Procedures

Qualifying subjects were asked to arrive at McLean Hospital by 2 PM on the first day of the study. They were informed that they could smoke marijuana at their usual frequency before this time, but that they would be supervised following their arrival at the hospital to ensure that they did not consume any further marijuana or any other drug (aside from their customary amounts of tobacco and caffeine) during the study period. On the afternoon of the first day, after signing informed consent, subjects completed a demographic questionnaire, including questions regarding their self-reported high school Scholastic Aptitude Test (SAT) scores, questions regarding subjective residual effects of marijuana, and the questions of the RAND Mental Health Inventory.[12] We then asked subjects about their frequency of marijuana use during each year since they first began using the drug and the number of days on which they had smoked marijuana during the last 30 days. In addition, we asked the specific days on which subjects had smoked and the number of episodes of smoking per day in each of the last 7 days. Incidents of smoking had to occur at least 1 hour apart to be counted as separate episodes. We also obtained subjects' self-reports of current frequency of alcohol, tobacco, and caffeine use; lifetime use of other types of illicit drugs; and most recent date of use of each other type of illicit drug reported. Finally, we administered the Axis I and Axis II portions of the Structured Clinical Interview for *DSM-III-R* (SCID)[13] to determine subjects' lifetime history of psychiatric disorders by the criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised* (*DSM-III-R*).[14] Subjects also gave a urine sample, which was tested for cannabinoids, as well as for amphetamines, barbiturates, methaqualone, opiates, phencyclidine, cocaine metabolites, and benzodiazepines.

Subjects then spent the remainder of that day and night under supervision. They had dinner, watched television, studied, or otherwise occupied themselves until bedtime, then slept in a room that could be observed by a monitor through a one-way mirror to ensure that they did not smoke marijuana at night. The following morning they were awakened at about 8:30 AM, permitted to drink their customary amount of coffee and have their customary breakfast, and then were administered a battery of neuropsychological tests between approximately 9 AM and 1 PM. Thus, all subjects had been abstinent from marijuana and other drugs for a minimum of 19 hours, and in practice usually at least 24 hours, before performing their testing.

Test Battery

During the testing session, an investigator blinded to the subject's history administered a neuropsychological test battery. First, the vocabulary subtest of the Wechsler Adult Intelligence Test–Revised (WAIS-R)[15] was administered to obtain an estimate of the subject's Verbal Intelligence Quotient (VIQ). Thereafter, attention and memory were assessed with the Stroop test,[16] the Wisconsin Card Sorting Test (WCST),[17] the Benton Verbal Fluency Test (Benton VFT),[18] the Wechsler Memory Scale (WMS),[19] the California Verbal Learning Test (CVLT),[20] and the Rey-Osterreith Complex Figure Test (ROCF).[21] All scores are reported herein as means and SDs unless otherwise specified.

Statistical Analysis

Differences between the heavy and light users and between other dichotomous groups (ie, heavy vs light male users, heavy vs light female users) were initially assessed using Student's *t* test for continuous variables. For R×C contingency tables, we computed significance by the exact test,[22] and for ordered categorical data, by the Cochran-Armitage trend test.[23] Subsequently, we performed analyses of covariance (ANCOVA), in which VIQ or SAT scores were entered into the model along with frequency of marijuana use, to assess the relative significance of each of these variables in determining test performance.

RESULTS

We recruited and interviewed 161 students. Two were excluded because they described only intermediate marijuana use on interview (approximately 15 days per month), even though they had reported nearly daily use on prior telephone screening. Of the 159 subjects accepted, six were excluded from analysis because of possible confounding variables: one was suspected of surreptitiously using marijuana despite supervision during the study; one reported a prior head injury with prolonged loss of consciousness; and four displayed current psychiatric disorders likely to affect neuropsychological test performance (two cases of major depression, one case of bipolar disorder, and one case of schizotypal personality disorder).

The remaining 153 subjects included 85 heavy and 68 light users. However, four of the self-described light users were found to display cannabinoids in their urine, and 15 of the self-described heavy users did not display cannabinoids in their urine. These 19 subjects were eliminated from the analysis, lest they had misrepresented the extent of their recent marijuana use. In addition, five of the heavy users (but none of the light users) displayed drugs other than cannabinoids in their urine (one had traces of phencyclidine, three had traces of cocaine, and one had traces of benzodiazepines). These subjects were also eliminated, leaving a final total of 65 heavy users (all with cannabinoids but with no other drugs in their urine) and 64 light users (none with any drug in the urine) for comparison.

The heavy and light users were reasonably well balanced in sexual distribution (light=31 men, 33 women; heavy=38 men, 27 women). As intended by the study design, the heavy and light groups were widely separated in their frequency of recent marijuana use. The median (range) number of days on which subjects had smoked in the last 30 days was as follows: heavy-using men, 28 (22 to 30); heavy-using women, 29 (22 to 30); light-using men, 2 (0 to 9); and light-using women, 1 (0 to 9) ($P<.001$ between heavy and light

groups within each sex: $P=.96$ between sexes in the light-using group and .80 in the heavy-using group). No significant differences were found between the overall heavy and light groups on any demographic variables, including mean age, year in college, area of residence in the United States, ethnicity, stated religious or political preferences, or type of secondary school attended (Table 1). Although marital and domiciliary status were not formally assessed, virtually all subjects in both groups were single and were living in dormitories or off-campus apartments. Although some subjects knew one another socially, no subject in either group was a biological relative of another. The two subject groups did not differ significantly on most measures of family background, including parents' marital status, political preference, or occupations. However, the heavy users reported that they came from more affluent families ($P=.01$ by trend test) (Table 1). No significant differences on any of these variables were observed when comparisons were made within the sexes separately, save for a significant relation between heavy use and higher family income among the men ($P=.02$ by trend test).

Heavy and light users did not differ significantly on self-reported scores on the verbal portion of the SAT in high school (heavy, 489±98, vs light, 512±93; $P=.21$). However, the heavy users reported significantly lower scores than light users on the SAT quantitative portion (494±96 vs 543±111; $P=.02$) and on the total SAT (983±130 vs 1055±174; $P=.02$).

No significant differences were found between heavy and light users on lifetime prevalence of any *DSM-III-R* Axis I or Axis II psychiatric disorder. Nineteen (29%) of the heavy users vs 15 (23%) of the light users displayed a history of other substance dependence or abuse. In a majority of cases, this history was a period of heavy alcohol use lasting less than 6 months. Only one user displayed current dependence on any other substance (alcohol dependence in one heavy user). On the RAND Mental Health Inventory, no differences were found on seven of the eight composite scores generated by this instrument (anxiety, depression, loss of behavioral/emotional control, emotional ties, life satisfaction, psychological distress, and psychological well-being). However, on the remaining scale, general positive affect, which produces a range of scores from 10 to 60, heavy users scored slightly higher than light users (40.6±11 vs 37.3±7; $P=.04$).

In a separate publication,[4] we have compared in detail the heaviest users (those who had smoked daily for 2 years or more; n=45) and the lightest users (those who had never smoked more than 10 times in any 1-month period in their lives; n=44), drawn from our entire original sample of 159 subjects. Even these two extreme groups, who were not subject to any of the exclusion criteria used in the present study, exhibited almost no significant differences on demographic measures, prevalence of psychiatric disorders other than substance abuse, and scores on the RAND Mental Health Inventory.

Table 1.—Demographic Features of Heavy vs Light Marijuana Users*

Demographic Feature	Light Users (n=64)	Heavy Users (n=65)
Age, y		
Median	21	20
Range	18-28	18-24
White, No. (%)	59 (92)	58 (89)
Public high school, No. (%)	49 (77)	43 (66)
Political orientation, No. (%)		
Conservative-moderate	32 (52)	29 (47)
Liberal-very liberal	30 (48)	33 (53)
Parents' marital status, No. (%)		
Married	37 (59)	36 (55)
Divorced	18 (29)	22 (34)
Other	8 (13)	7 (11)
Family annual income, No. (%)†		
<$15 000	5 (8)	0
$15 000-$30 000	7 (11)	7 (11)
$30 000-$50 000	16 (25)	14 (22)
$50 000-$100 000	25 (39)	19 (29)
>$100 000	11 (17)	25 (38)

*The number of subjects with missing data is as follows: for political orientation, two light users and three heavy users; for parents' marital status, one light user.
†$P=.01$ by Cochran-Armitage trend test.

The heavy and light users differed slightly on VIQs based on the WAIS-R vocabulary subscale (heavy users, 100.6±12.0, vs light users, 104.8±13.5; $P=.06$). Because of this finding, the statistical significance of differences between groups on all subsequent neuropsychological variables was assessed using ANCOVA controlling for VIQ. However, means and SDs for the two groups presented herein and in the tables are raw figures; they would be altered only slightly if adjusted for the covariate.

Looking first at digit span, variously considered a measure of span of attention,[5] a measure of auditory sequential processing,[6] or an indirect measure of anxiety,[7] the two groups proved virtually identical, both in the analysis of the total sample and on separate analysis of the male subjects and female subjects (total sample: heavy users, 11.0±2.4; light users, 10.8±2.3; $P=.41$). Similarly, on the Stroop test, which measures sustained attention with and without an interference condition, heavy and light users again showed no significant differences on the word reading, color naming, or interference subtests. After separate analysis of male and female users, no significant differences were found between the heavy- and light-using women, but differences appeared among the men: male heavy users were slower to name 100 colors than light users (62.5±11.5 vs 56.7±10.5 seconds; $P=.05$), but they also made slightly fewer errors on this task (median of one error in each group; range of zero to four errors in male heavy users and zero to six errors in male light users; $P=.05$). Male heavy users were also slower than light users on the interference portion of the Stroop test (111.7±24.9 vs 97.7±22.8 seconds; $P=.04$).

On the WCST, a test of mental flexibility and abstraction ability,[8] an overall comparison of heavy vs light users showed a significant difference in categories achieved on deck 1 (Table 2). On inspection, this difference was caused by a significantly higher number of errors among the heavy users, which in turn proved attributable to a markedly greater tendency for perseveration. Heavy users produced significantly more perseverations outside the category (an incorrect response, based on a previously correct sorting principle, following the completion of the sort) and slightly more perseverations inside the category (an incorrect response that immediately followed an identical incorrect response).[9] Combining the total number of perseverations of both types for both decks 1 and 2 of the WCST (Figure 1), the heavy users displayed strikingly more perseverations than the light users. These findings remained similar when heavy and light users were compared separately within each sex.

On the Benton VFT, scores represented the total number of words beginning with the letters F, A, and S

Table 2.—Neuropsychological Findings: Wisconsin Card Sorting Test*

Findings	Light Users			Heavy Users		
	Men (n=31)	Women (n=33)	All (n=64)	Men (n=38)	Women (n=27)	All (n=65)
Deck 1						
No. of sets completed	4.4 (0.8)	4.5 (0.7)	4.4 (0.8)	4.1 (0.6)	4.2 (0.6)	4.1 (0.8)†
Items sorted correctly	53.1 (3.5)	53.5 (3.7)	53.3 (3.6)	50.6 (4.4)†	52.3 (4.6)	51.3 (4.5)†
Perseverations outside, median (range)	3 (0-16)	3 (0-10)	3 (0-16)	5 (0-18)‡	4 (0-14)‡	4 (0-18)§
Perseverations inside, median (range)	0 (0-5)	0 (0-4)	0 (0-5)	1 (0-6)	1 (0-10)	1 (0-10)
Deck 2						
No. of sets completed	4.8 (0.6)	4.8 (0.5)	4.8 (0.5)	4.6 (0.6)	4.7 (0.5)	4.6 (0.5)
Items sorted correctly	58.6 (2.3)	58.0 (2.2)	58.3 (2.2)	55.1 (2.4)†	56.2 (2.3)	55.5 (2.4)
Perseverations outside, median (range)	2 (0-5)	2 (0-7)	2 (0-7)	2 (0-6)‡	2 (0-6)	2 (0.6)†
Perseverations inside, median (range)	0 (0-1)	0 (0-3)	0 (0-3)	0 (0-2)	0 (0-2)	0 (0-2)

*Number of sets completed and number of items sorted correctly are shown as means with SDs in parentheses. Perseverations are shown as medians with ranges in parentheses. See text for definitions of perseverations "outside" and "inside" the category. Significance is reported for all differences between comparable groups of heavy vs light users (ie, men vs men, women vs women, all vs all) by analysis of covariance controlling for Verbal Intelligence Quotient.
†$P<.05$.
‡$P<.01$.
§$P<.001$.

generated by the subject when allowed 60 seconds per letter. Scores were adjusted for age, sex, and education by the method of Benton and Hamsher.[18] A score of 31 to 44 is considered normal, and 30 is the threshold of low normal.[30] Five (8%) of the heavy users, but none of the light users, scored at or below this threshold, a nearly significant difference ($P=.06$). On ANCOVA, a significant interaction ($P=.009$) was found between VIQ and marijuana use (heavy vs light) in their effect on VFT scores. On analysis of this interaction, we found that among subjects with the lowest VIQs, those who were heavy users produced fewer words than those who were light users. However, heavy and light users with average to high VIQs exhibited virtually no difference in verbal fluency. This interaction between VIQ and degree of marijuana use was the only such interaction attaining a significance of .05 or less among any of the overall comparisons between heavy and light users assessed by ANCOVA in this article.

Turning to measures of memory, the memory quotient on the WMS did not differ significantly between the groups while controlling for VIQ. Looking at specific submeasures of the WMS, no significant differences were found between groups on immediate recall for prose passages, word pairs, or figures. Delayed recall of prose passages and word pairs was also similar between groups, but delayed recall of figures was significantly reduced among heavy users. Looking at the sexes separately, this difference was contributed entirely by men (heavy users, 10.3±3.2 elements recalled; light users, 12.2±1.5; $P=.007$); women exhibited no difference (heavy users, 11.7±2.3; light users, 11.8±2.5; $P=.87$).

Further examining verbal memory on the CVLT, heavy and light users differed significantly on recall of the first administration of the word list (Table 3). After five presentations of this list, heavy users still lagged significantly behind light users in their ability to learn, with fewer items recalled in each trial and in the sum of all five trials (Figure 2). Furthermore, after an interference condition that included the presentation of a different word list, the heavy users produced fewer correct words from the original list despite the short delay between the presentation of the original list and the recall condition (shown in Table 3 as "short-delay free recall"). After a 40-minute delay, heavy users again displayed a trend ($P=.07$) to recall fewer words from the original list (shown in Table 3 as "long-delay free recall"). The difference between heavy and light users in long-delay recall persisted even after cuing (see "long-delay cued recall" in Table 3), suggesting that heavy users also experienced more difficulty in retrieval of new verbal information. Of note, however, there was no decay of recall between the short-delay and long-delay conditions in either group. All these findings remained similar (though with reduced statistical power) when the male and female subgroups were analyzed separately.

Finally, looking at visuospatial memory with the ROCF, no differences were found between heavy and light users on copying the complex figure, indicating no fundamental impairment of visuospatial functioning (Table 4). However, on immediate recall of the figure, heavy-using men scored significantly lower than light-using men on the number of elements of the figure reproduced. No similar differences were observed among women. No further loss of information appeared in either sex on delayed copying of the figure after approximately 40 minutes.

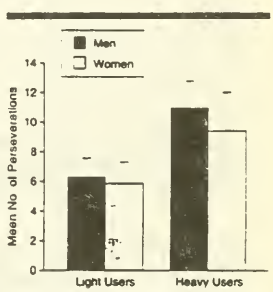

Figure 1.—Total perseverations on the Wisconsin Card Sorting Test. The error bars represent the 95% confidence interval for each mean value shown. The significance of differences was computed by analysis of covariance controlling for Verbal Intelligence Quotient. For all heavy users vs all light users, $P<.001$; for male heavy users (n=38) vs male light users (n=31), $P=.002$; for female heavy users (n=27) vs female light users (n=33), $P=.01$.

We then performed additional analyses to assess for possible confounding effects in the study. We first considered the important question of whether the differences in observed neuropsychological performance between heavy and light users might be due to premorbid differences between these groups in cognitive function, rather than to an effect of marijuana use.

The lower VIQ scores of the heavy users, as well as their lower self-reported SAT scores, raises this possibility. However, as discussed herein, when we performed ANCOVA controlling for VIQ, we nevertheless continued to find equally or more strongly significant differences

Table 3.—Neuropsychological Findings: California Verbal Learning Test (Selected Items)*

Findings	Light Users			Heavy Users		
	Men (n=31)	Women (n=33)	All (n=64)	Men (n=38)	Women (n=27)	All (n=65)
Items recalled, trial 1	7.9 (1.9)	8.3 (2.5)	8.1 (2.3)	6.6 (1.8)†	7.3 (1.8)	6.9 (1.8)†
Items recalled, trial 5	13.7 (2.1)	14.3 (2.2)	14.0 (2.2)	12.5 (2.1)	14.2 (1.4)	13.2 (2.0)‡
Short-delay free recall	12.4 (2.9)	13.7 (2.2)	13.0 (2.6)	11.4 (2.3)	12.6 (2.5)	11.9 (2.4)‡
Long-delay free recall	12.6 (3.2)	13.9 (2.5)	13.3 (2.9)	11.5 (2.4)	13.3 (2.2)	12.3 (2.4)
Long-delay cued recall	15.1 (1.3)	15.6 (0.8)	15.3 (1.1)	14.6 (1.3)	15.0 (1.7)	14.9 (1.5)‡

*All data shown are means with SDs in parentheses. Significance is reported for differences between comparable groups of heavy vs light users (ie, men vs men, women vs women, all vs all) by analysis of covariance controlling for Verbal Intelligence Quotient.
†$P<.01$.
‡$P<.05$.

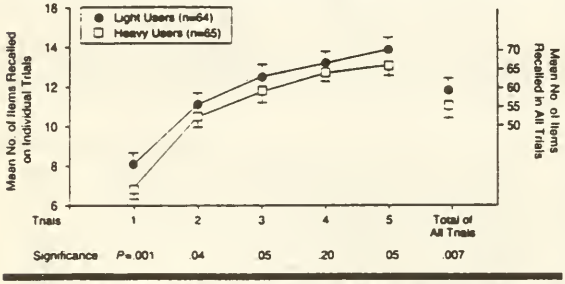

Figure 2.—Number of items recalled on successive trials of the California Verbal Learning Test. The error bars represent the 95% confidence interval for each mean value shown. The significance of differences was computed by analysis of covariance controlling for Verbal Intelligence Quotient, comparing light users vs heavy users for each trial and for the sum of all trials.

between groups. We also performed ANCOVA examining all the neuropsychological test results while controlling for verbal, quantitative, and total SAT scores. These latter calculations would be expected to produce, if anything, an overly conservative estimate of the neuropsychological effects of marijuana, since lower SAT scores may have represented in part a consequence of heavy use in high school, rather than a consequence of lower premorbid cognitive abilities. Nevertheless, ANCOVA controlling for SAT scores yielded essentially the same results as that controlling for VIQ. These observations argue against the possibility that the impairment observed in the heavy users was attributable to some premorbid deficiency in this group.

Also relevant to this question is our previously published analysis, cited earlier,[24] which found few demographic or psychiatric differences even when comparing the 45 heaviest users and the 44 lightest users in our overall sample of 159 subjects. These results also argue against an innate or premorbid difference between groups and thus further suggest that the reduced test performance among heavy users in the present study was an effect of marijuana itself.

The more frequent abuse of other substances among heavy users represents another potentially confounding variable: greater alcohol use, history of dependence on another substance, or recent use of another substance might all be expected to contribute to impaired neuropsychological performance. To test for this possibility, we performed comparisons of heavy vs light users after deleting (1) all subjects with a history of abuse of or dependence on any other substance (thus yielded a comparison of 46 heavy vs 49 light users); (2) all subjects who reported that they currently consumed more than 12 alcoholic drinks per week (yielding 36 heavy vs 52 light users); and (3) all subjects who reported use of any illicit substance other than marijuana within the past month (yielding 35 heavy vs 57 light users). Finally, we excluded all subjects who met any of these three criteria, creating particularly "purified" samples of 16 heavy users vs 36 light users. In all these exercises, the differences between heavy and light users remained similar or even widened. As shown in Table 5, on three of four measures previously found to differentiate heavy users from light users, the difference between the "purified" groups actually exceeds that found between the original groups.

These analyses suggest that the differences observed in this study were indeed due to residual effects of marijuana use, rather than to premorbid differences between groups or to the effects of other substance use. However, this observed impairment might represent merely a temporary effect, due to either a drug residue of cannabinoids lingering in the brain[1,31] or an abrupt withdrawal from heavy use.[32-34] Alternatively, the impairment might represent a lasting CNS alteration effect due to some actual damage to the CNS related to overall lifetime exposure. In an effort to distiaguish between these possibilities, we performed two analyses. First, we compared the 13 light users who at a previous time in their lives had been heavy users (smoking 25 or more days per month) with the 32 light users who had never smoked more than nine times per month at any time in their lives. Unexpectedly, the former group displayed a much higher VIQ (114±11 vs 103±14; $P=.01$). We then chose only the 13 always-light users with the highest VIQs, thereby matching the two groups on VIQ. On comparing these two groups of 13, no differences approaching significance were found on any neuropsychological variables—although it must be recognized that the sample sizes in this comparison were small.

As a second test, we divided the entire group of 64 light users into three equal subgroups on the basis of lifetime use of marijuana (group 1=17 to 70 joints smoked in their lifetimes, n=21 subjects; group 2=80 to 400 joints in lifetime, n=21; and group 3=400 to 4500 joints in lifetime, n=22). We then performed ANCOVA examining each neuropsychological test score with group status (1, 2, or 3) and VIQ entered as covariates. Although many of the test scores were significantly associated with VIQ in this analysis (as might be expected), on none of the variables was performance significantly related to total lifetime consumption of marijuana. Thus, these analyses, though of low statistical power,

Table 4.—Neuropsychological Findings: Rey-Osterrieth Complex Figure Test*

Findings	Light Users			Heavy Users		
	Men (n=31)	Women (n=33)	All (n=64)	Men (n=38)	Women (n=27)	All (n=65)
Elements of figure correctly identified						
Initial copying	34.8 (1.6)	34.0 (1.8)	34.3 (1.7)	34.2 (2.0)	33.7 (2.2)	34.0 (2.1)
Immediate recall	23.8 (4.7)	19.5 (6.5)	21.6 (6.1)	20.1 (6.2)†	20.6 (4.8)	20.3 (5.6)
Delayed recall	23.2 (4.5)	19.5 (6.3)	21.3 (5.8)	20.2 (6.1)	20.6 (6.0)	20.4 (6.0)

*All data shown are means with SDs in parentheses. Significance is reported for differences between comparable groups of heavy vs light users (ie, men vs men, women vs women, all vs all) by analysis of covariance controlling for Verbal Intelligence Quotient.
†$P<.05$.

Table 5.—Neuropsychological Findings: Total Sample vs "Pure" Cases*

Findings	Light Users		Heavy Users	
	All Cases (n=64)	"Pure" Cases (n=36)	All Cases (n=65)	"Pure" Cases (n=16)
Stroop test				
Interference subtest, time in seconds	99.6 (19.6)	99.8 (17.7)	106.6 (23.5)	110.5 (32.1)
Wisconsin Card Sorting Test				
Total perseverations, median (range)	5 (0-16)	4 (0-16)	9 (0-28)†	12.5 (0-25)†
Wechsler Memory Scale				
Delayed recall of figures, elements recalled	12.0 (2.1)	11.8 (2.6)	10.9 (2.9)‡	10.0 (3.9)
California Verbal Learning Test				
Total items remembered on 5 trials combined	59.2 (6.7)	58.5 (9.0)	55.0 (8.0)§	56.9 (7.3)

*"Pure" cases represent individuals who (1) displayed no current or past history of any substance abuse or dependence (other than cannabis) by the criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition Revised*; (2) currently reported drinking fewer than 12 alcoholic drinks per week, and (3) reported no use of any illicit drug other than marijuana during the past month. All data shown are means with SDs in parentheses, with the exception of total perseverations on the Wisconsin Card Sorting Test, which are shown as medians with the ranges in parentheses. Significance is reported for differences between comparable groups of heavy vs light users (ie, all cases vs all cases, "pure" cases vs "pure" cases) by analysis of covariance controlling for Verbal Intelligence Quotient.
†$P<.001$.
‡$P<.05$.
§$P<.01$.

weigh tentatively against a CNS alteration hypothesis.

COMMENT

We compared 65 college students who smoked marijuana regularly with 64 students who smoked only occasionally. The heavy users had smoked a median of 29 days (range, 22 to 30 days) in the past 30 days, and all displayed cannabinoids in their urine. Light users had smoked a median of 1 day (range, 0 to 9 days) in the past 30 days, and none displayed urinary cannabinoids. Students displaying a current psychotic disorder, schizotypal personality disorder, major mood disorder, or history of severe head injury with loss of consciousness were excluded, as were students currently taking any medication with psychotropic effects and those displaying any substance other than cannabinoids in their urine. We also attempted to recruit roughly equal numbers of male and female students in each group so that results could be analyzed within each sex separately, as well as for the heavy users vs the light users as a whole. All 129 students received a battery of neuropsychological tests after a supervised overnight period of abstinence from marijuana and other drugs of abuse.

The findings on this battery of tests suggest that heavy marijuana use was associated with reduced function of the attentional/executive system, as exhibited by decreased mental flexibility and increased perseveration on the WCST, and reduced learning, as seen on the CVLT. In addition, verbal fluency on the Benton VFT was impaired with heavy use, but only in subjects with lower VIQs, perhaps because their fluency was more vulnerable to attentional impairment. However, the ability to retain newly learned information after a temporal delay appeared to remain relatively intact in the heavy users, as exhibited by the absence of decay on the delayed recall conditions of the CVLT and ROCF. In short, although marijuana use may produce some compromise in memory function, it appears that the principal effect is in the attentional/executive system, with recall memory functions per se remaining relatively unaffected. Our data suggest that multiple brain systems may be affected by marijuana, but the most pronounced effects may be in sustained attention, mediated by brain stem structures, and in the capacity to shift attention, associated with prefrontal cortical regions.

In general, these findings were somewhat more prominent among men than women, even though male heavy users did not differ from female heavy users in their reported recent or lifetime marijuana consumption. Nevertheless, the possibility remains that men were actually ingesting a greater total dose of cannabinoids during their individual episodes of smoking.

The differences between heavy users and light users did not appear to be due to fundamental demographic or psychological differences between these groups, as evidenced by our comparisons in the present study and our previously published comparison of the heaviest vs the lightest users from our larger original sample.[24] Similarly, the differences observed did not appear attributable to premorbid differences between heavy and light users in neuropsychological function—since the differences in test scores remained significant, or even increased in significance, when we performed ANCOVA controlling for VIQ or for self-reported verbal or quantitative high school SAT scores. Finally, the differences did not appear attributable to use of other drugs or large amounts of alcohol, since analyses excluding individuals with these possible confounding factors failed to change the differences observed, and in some instances even widened them.

Despite these analyses, however, certain methodological limitations must be acknowledged. First, it must be recognized that a large number of individual comparisons were performed; therefore, some results may have achieved statistical significance by chance alone. On the other hand, the trend of the data was consistent: virtually every difference, whether significant or not, was in the direction of greater impairment among heavy users.

Second, it is conceivable that heavy and light users did differ on certain premorbid cognitive abilities and that the analyses controlling for VIQ and SAT scores did not fully correct for such differences. Only a standardized test, administered to all subjects in a uniform manner before their first marijuana use, would fully address this issue. Only one published study, to our knowledge, has utilized such test results[11] and, despite this control, nevertheless found residual impairment in heavy users similar to that found in our study.

Third, it might be argued that nonusers would have represented a better

comparison group than light users. However, we reasoned that light users might be less likely to differ from heavy users on possible confounding variables, such as aspects of lifestyle, study habits, or background, than would nonusers. Thus, our comparison, while perhaps producing a slightly conservative estimate of the effects of marijuana, may also be less vulnerable to confounding.

Fourth, most historical data, including subject's SAT scores, prior use of other substances, and even prior marijuana use, were obtained from self-reports without external validation. However, inaccurate self-reports appear unlikely to have imposed marked bias, since subjects would have derived no particular benefit from distorting their reports in this study. Further, our conclusions would be seriously affected only in the unlikely event that subjects' self-reports were distorted in some systematic manner that was correlated with neuropsychological test scores.

Fifth, several studies have suggested that abrupt discontinuation of heavy cannabis use, as was required by our supervised abstinence period, may precipitate a withdrawal syndrome characterized by insomnia, restlessness, and irritability.[32-34] Such a syndrome might have influenced our findings; only a study with a much longer abstinence period could fully resolve this issue. Of studies using longer abstinence periods, one found few neuropsychological deficits among 37 heavy users after 3 to 4 days,[35] but another found memory impairment in 10 users after 6 weeks[3] and another found deficits on an auditory selective attention task in 28 users after a mean abstinence of about 2 years.[36] These latter two findings suggest a CNS alteration effect of marijuana, not explainable by drug withdrawal or by a drug residue in the CNS.

Sixth, it should be recognized that our study might have underestimated the potential residual effects of marijuana because of the young age of the sample. Although many students had smoked marijuana daily for 2 years or more, as noted earlier, none had smoked regularly for more than a decade. Thus, a comparison of middle-aged heavy marijuana users, with longer histories of use, might produce more robust findings.

In short, the findings of our study, together with those of other recent, well-controlled investigations,[16-17,36] raise several questions that must be pursued. These questions include how long marijuana-associated neuropsychological impairment lasts, whether it is related to cumulative lifetime use, whether it interacts with normal aging, and to what extent, if any, it compromises the actual functioning of users in their daily lives. Specifically, although marijuana use may not cause overt psychopathology or serious academic impairment,[24,37] subtle drug-induced deficits in sustaining and shifting attention may nevertheless cause important difficulties in adapting to intellectual and interpersonal tasks. Only by further study of these issues can it be judged whether neuropsychological impairment associated with marijuana use should be considered a public health problem.

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CRUDE MARIJUANA

AS A MEDICINE

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ABSTRACT

Background:

In the last several years, the public has seen the issue of the therapeutic applications of crude leaf marijuana reach the forefront of discussions of public policy. This movement, which has been fueled by the forces seeking to legalize marijuana, has gained substantial momentum. Pressure has been exerted on the health and legal systems, and we now find that various segments of the government are considering a reexamination of the issue.

Conclusion:

This paper examines the scientific and medical facts surrounding the therapeutic application of marijuana, the potentially harmful effects of the drug, the alleged unfilled needs of the medical community in the related therapeutic areas, and appropriate solutions. Because of the impurity of crude marijuana and its known toxic effects, it does not represent a useful medical alternative to currently available medications.

KEY WORDS: Marijuana, medicinal marijuana, chemotherapy induced nausea

HISTORY

The movement to use marijuana as a medicine was launched in the 1972 petition to the Department of Justice Drug Enforcement Administration (DEA) to reschedule marijuana from a Schedule I drug (unable to be prescribed, high potential for abuse, not currently accepted for medicinal use, and lack of safety of the drug) to a Schedule II drug (high potential for abuse, currently accepted for medical use, potential for abuse, but able to be prescribed) (1).

This rescheduling petition was initiated by the National Organization for

the Reform of Marijuana Laws (NORML), Alliance for Cannabis Therapeutics (ACT), and the Cannabis Corporation of America. It is significant that these organizations have neither a medical base, nor do they represent any accredited or respected medical entity. Furthermore, individuals involved with these organizations publicly disclose their goal of legalizing marijuana and other illicit drugs.

Because of continued controversy surrounding the rescheduling of marijuana, Administrative Law Judge Francis Young was asked by the DEA in 1988 to rule on the merits of rescheduling marijuana to Schedule II. Despite scientific evidence relating the harms of marijuana and questioning the need for it in the general pharmacopoeia, he ruled that marijuana should be rescheduled to Schedule II for nausea associated with cancer chemotherapy (2). Judge Young concluded, however, that insufficient evidence existed to warrant use of crude marijuana for glaucoma.

Judge Young's decision supporting rescheduling drew such substantial criticism from drug policy experts, drug prevention experts, the DEA, and medical experts from around the country, that his recommendations were not followed. He relied heavily on anecdotal information presented from the pro-marijuana movement as well as anecdotal testimony from individuals closely aligned with those organizations. He virtually ignored the volumes of evidence which opposed the move to reschedule marijuana. His capricious decision has become the centerpiece for the pro-marijuana movement in its quest to gain rescheduling and legalization of marijuana.

After substantial legal maneuvering on the part of NORML and the Alliance for Cannabis Therapeutics, including a petition to the Federal Court of Appeals in 1991, the administrator of the Drug Enforcement Administration(1) denied the petition to reschedule. To examine the potential

for therapeutic uses of crude marijuana, the administrator of the DEA turned to numerous nationally recognized experts (table 1). In the face of this expert testimony, the drug lobby could only produce evidence consisting of anecdotes and testimony of a handful of physicians with limited or absent clinical experience with the medical areas in question. During the rescheduling hearings it became clear that crude marijuana has not been accepted as a medicine by the American Medical Association, National Multiple Sclerosis Society, the American Glaucoma Society, the American Academy of Ophthalmology, or the American Cancer Society.

After over twenty years of review and appeals, the issue of whether to allow smoked marijuana to be prescribed as medicine was recently clarified by the United States Court of Appeals for the District of Columbia in a decision handed down in February 1994 (3). This important decision sets forth the guidelines that only rigorous scientific proof can satisfy the requirement of "currently accepted medical use" (table 2). Crude marijuana does not meet these guidelines.

The Court of Appeals decision further dispelled the allegation that the administrator of the Drug Enforcement Administration violated statute or was biased in his decision. In addition to a thorough discussion of the evidence, the Court stated, "The administrator reasonably accorded more weight to the opinions of the experts than to the laymen and doctors on which the petitioners relied."

ALLEGED MEDICINAL APPLICATIONS OF MARIJUANA

The medical marijuana campaign gained momentum when a student project at Harvard was initiated by Rick Doblin to examine oncologists choices for antiemetics through a questionnaire. Doblin is the President of the Multidisciplinary Association for Psychedelic Studies (MAPS). MAPS strongly

supports the legalization and even medical uses of such street drugs as LSD and MDMA (Ecstasy). His staff sponsor, Mark Kleiman, has also voiced his support for the legalization of marijuana.

The authors reported (4) that 48% of the respondents would prescribe marijuana if rescheduled for legal prescription. Using the researchers own data, one finds a low response rate of approximately 40%. Respondents only accounted for 9% of practicing oncologists. Only 16% of those surveyed felt that marijuana was effective in 50% or more of patients. Only 5% of those surveyed favored making marijuana available by prescription. These numbers become even less significant if compared to all practicing oncologists. Unfortunately, inaccurate interpretations of this survey were widely released, widely publicized by the media, and incorrectly gave the impression that oncologists generally want smoked marijuana available as medicine.

In 1993, Harvard psychiatrist Lester Grinspoon published a book (5) which now serves as the bible of the "medical marijuana" movement. He assembled a group of anecdotes which he calls on to justify the rescheduling of marijuana. Similar to the pro-marijuana lobby during rescheduling hearings, Grinspoon asserts that marijuana should be used for nausea associated with cancer chemotherapy, glaucoma, wasting in AIDS, depression, menstrual cramps, pain, and virtually unlimited ailments. His anecdotes have no controls, no standardization of dose, no quality control, and no independent medical evaluation for efficacy or toxicity.

The historical uses of marijuana cited in Grinspoon's book include such cultures as India, Asia, the Middle East, South Africa, and South America and are considered by those in the medical marijuana movement as evidence of appropriate medical uses of the drug. The Chinese allegedly used marijuana to "quicken the mind, induce sleep, cure dysentery, stimulate appetite, relieve

headaches, and cure venereal disease" (4) One of Grinspoon's references from 1860 states marijuana provided beneficial medical effects "without interfering with the actions of the internal organs" Such folk medicine applications of marijuana from the 1700's and 1800's are referenced by the authors as evidence justifying modern medical applications.

The field of medicine in those earlier years was fraught with potions and herbal remedies. Many of those were absolutely useless, or conversely were harmful to unsuspecting subjects. Thus evolved our current Food and Drug Administration and drug scheduling processes which should not be undermined.

Concurrent with Doblin and Kleiman, Schwartz surveyed oncologists in the Washington D.C. area (6) and determined that THC ranked ninth in preference for the treatment of mild nausea and sixth for the treatment of severe nausea. It is of course important to recognize that this form of THC is not smoked as with marijuana cigarettes. Only 12% had recommended THC (by prescription or illegally) for more than 50 patients. It was felt that nausea was relieved in only 50% of patients and that 25% had adverse side effects.

Because of the exclusion of the newer antiemetics from the two earlier surveys, Schwartz and Voth(7) surveyed 1500 clinical adult oncologists in 1994 with a 75% response rate. Over 88% of respondents had never recommended crude marijuana to patients. Only 4% of the respondents estimated that they would recommend crude marijuana more often than 25 times per year. In contrast, the median annual use of antiemetics ondansetron (Zofran) and granisetron (Kytril) was 250 prescriptions. Furthermore, the support of making crude marijuana available to patients was strongest among physicians who also supported the concept of general legalization of marijuana for recreational use.

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Some of the best advice on the use of marijuana or THC can be obtained from the producers of Marinol[R].(11) the oral THC preparation which is available for prescription.

> "Because of its profound effects on the mental status, patients should be warned not to drive, operate complex machinery, or engage in any activity requiring sound judgment and unimpaired coordination while receiving Marinol.... Patients should be closely observed, if possible within an inpatient setting. This is especially important in the naive patient. However, even patients experienced with Marinol may have serious untoward responses not predicted by prior uneventful exposures....Marinol is indicated for the treatment of nausea and vomiting associated with cancer chemotherapy in patients who have failed to respond adequately to conventional antiemetic treatments. This restriction is required because a substantial proportion of patients treated with Marinol can be expected to experience psychomimetric reactions not observed with other antiemetic agents"

Available research on the utility of THC has demonstrated some effectiveness of the purified form of the drug in treating nausea associated with cancer chemotherapy. Sallan et al.(8) dealt only with pure THC in the treatment of chemotherapy-associated nausea, not smoked marijuana. Chang(9) tested both THC and marijuana, so conclusions regarding effectiveness cannot be readily attributed to either THC or crude marijuana. Levitt(10) and coworkers actually determined that purified THC was more effective than smoked marijuana.

The pro-drug lobby would have the public and policy makers incorrectly believe that crude marijuana is the only treatment alternative for masses of cancer sufferers who are going untreated for the nausea associated with chemotherapy, glaucoma, multiple sclerosis, and other ailments. The negative side effect profile for marijuana, even oral dronabinol (Marinol[R]), far exceeds most of the other effective agents available.

If there exist treatment failures of available medications in these patients, the use of marijuana would, at minimum, demonstrate unpleasant side effects. In the studies performed to examine THC for chemotherapy-associated nausea (1), elderly patients could not tolerate the drug. Chronic, daily doses of the drug would be necessary to treat many of the proposed medical conditions. This would unnecessarily expose the patients to the toxic effects.

To determine the potential medical efficacy of marijuana as it relates to several disease states, a comprehensive review of the potential medicinal applications of marijuana was recently undertaken at the request of the Assistant Secretary of Health, Dr. Philip Lee.(12) Opinions were requested from investigators at the National Institute on Allergy and Infectious Diseases, who commented on the AIDS wasting syndrome; the National Cancer Institute who commented on the use of marijuana as an antiemetic in cancer chemotherapy; the National Eye Institute who commented on marijuana's use in glaucoma; and the National Institute for Neurological Disorders and Stroke who commented on marijuana's role as an antispasticity drug in multiple sclerosis. The summary opinion stated:

> "This evaluation indicates that sound scientific studies supporting these claims are lacking despite anecdotal claims that smoked marijuana is beneficial. Scientists at the National Institutes of Health indicate that after carefully examining the existing preclinical and human data, there is no evidence to suggest that smoked marijuana might be superior to currently available therapies for glaucoma, weight loss associated with AIDS, nausea and vomiting associated with cancer chemotherapy, muscle spasticity associated with multiple sclerosis, or intractable pain."

COMPLICATIONS OF MARIJUANA USE

Marijuana use continues to represent a substantial portion of the drugs used in our society. While its use declined in the late 1980's and early 1990's, a trend toward increasing use has recently be seen in high school students (table 3) (13). Marijuana remains the most frequently used illegal drug. The chronic use of marijuana has now been demonstrated to be associated with higher utilization of the health care system and its associated cost(14); a long suspected phenomenon.

Mental, affective, and behavioral effects are the most easily recognized consequences of marijuana use. Concentration, motor coordination, and memory (15-19) are all adversely impacted. Memory is impaired for several months even after cessation of use. The ability to perform complex tasks such as flying (20,21) is impaired even 24 hours after the acute intoxication phase. The association of marijuana use with trauma and intoxicated motor vehicle operation is also well established (22-27). After chronic use, even marijuana addicts admit that their motivation to succeed lessens. With oral forms of marijuana or pure THC patients risk these effects. Several biochemical models have demonstrated abnormal changes in brain cells, brain blood flow, and evidence of brain wave changes(28-30). Pathologic behavior such as psychosis is also associated with marijuana use (31,32). The more chronic the use of marijuana, as is necessary for chronic diseases such as glaucoma, the higher the risk.

Despite arguments from the pro-marijuana culture to the contrary, marijuana is a dependence-producing drug. Strangely, in the course of the rescheduling hearings, the pro-drug petitioners admitted that "marijuana has a high potential for abuse and that abuse of the marijuana plant may lead to severe psychological or physical dependence" (2). These are points which they

now deny. This dependence and associated "addictive" behaviors have been well described in the marijuana literature (33-38). Marijuana dependence consists of both a physical dependence (tolerance and subsequent withdrawal) and a psychological dependence. The gateway effect of marijuana along with tobacco and alcohol is also well established in research. (34,39,40).

While the dependence producing properties of marijuana are probably a minimal issue for chemotherapy associated nausea when medication is required sporadically, it is a major issue for the chronic daily use necessary for glaucoma, AIDS wasting syndrome, and other alleged chronic applications

The respiratory difficulties associated with marijuana use preclude the inhaled route of administration as a medicine. Smoked marijuana is associated with double to triple the concentrations of tar, carbon monoxide, and carcinogens found even in cigarette smoke (41). Marijuana adversely impairs some aspects of lung function and causes abnormalities in the respiratory cell lines from large airways down to the alveoli (42-51). In addition to these cellular abnormalities and consequences, contaminants of marijuana smoke are known to include various pathogenic bacteria and fungi (52-54). Those at particular risk for the development of disease and infection when these substances are inhaled, are those users with impaired immunity.

The effects of marijuana on the unborn were long suspected after original studies in Rhesus monkeys demonstrating spontaneous abortion. It has been established that exposure to marijuana during pregnancy (55-60), is associated with changes in size, weight, and neurologic abnormalities in the newborn. A very alarming association also exists between maternal marijuana use and the development of non-lymphocytic leukemia in offspring (61,62) Additionally, hormonal function in both males and females is disrupted (63-67). The potential for hormonal abnormalities in the unborn is undetermined but real.

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One of the earliest findings in marijuana research was the effect on various immune functions, which is now evidenced in an inability to fight herpes infections and the discovery of a blunted response to therapy for genital warts during cannabis consumption (68, 69). Abnormal immune function is, of course, the cornerstone of problems associated with AIDS. The use of chronic THC in smoked form for AIDS wasting not only exposes the patient to unnecessary pathogens, but also risks further immunosuppression. A hallmark of the treatment for AIDS is avoidance of drug use, not extension or perpetuation of it. The use of marijuana simply further enslaves them to their malady.

It should be clear that use of marijuana exposes the user to substantial health risks. In chronic use or use in populations at high risk for infection and immune suppression the risks are unacceptable.

SOCIAL ASPECTS OF RESCHEDULING MARIJUANA

The unfortunate reality is that the pro-marijuana movement is exploiting the suffering of patients with chronic illness to their own benefit. Under the false and dangerous claim that smoking marijuana offers significant benefits to those suffering from a variety of tragic ailments over existing medicines, the drug culture seeks to use medical applications of smoked marijuana to gain public acceptance. In a recent edition of High Times (70), (a marijuana culture magazine) the director of the National Organization for the Reform of Marijuana Laws (NORML) expressly stated that the medicinal uses of marijuana are an integral part of the strategy to legalize marijuana.

When we, as concerned experts, raise this issue as one of the reasons not to reschedule the drug, we are criticized by the drug culture and their supporters who have gained a credible appearance (71).

CONCLUSIONS:

If better therapeutic alternatives for the previously mentioned medical conditions are identified by reputable medical groups, research funding should be available for properly designed studies into the application of alternative forms of pure THC. Research protocols should be focused on pure THC rather than crude forms of marijuana. Examples could include the formulation of rectal suppository or aerosol forms of dronabinol.

We cannot bypass the usual safety and efficacy process of the FDA because of the hue and cry of a self-serving drug culture which seeks to add medicinal applications of marijuana to mixed messages of legalization of illegal drugs and tolerance of drug use. Smoked marijuana, an impure and toxic substance has no place in the medical armamentarium. Those who propose medical uses or conduct research on the use of marijuana have an ethical responsibility not to expose their subjects to unnecessary risks. In disease states requiring chronic administration, marijuana exposes the patient to unnecessary risk. Under current guidelines, marijuana is not a medicine, and using crude marijuana as a medicine would be a step backward to the times of potions and herbal remedies.

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Table 1

Some of the Experts Used in the Decision by the Administrator of the Drug Enforcement Administration in Rejecting the use Crude Marijuana as a Medicine:

Dr. David Ettinger, Professor of Oncology at Johns Hopkins University;

Dr. Richard Gralla Professor of Medicine at Cornell University and associate attending physician at the Sloan- Kettering Cancer Center;

Dr. John Laszlo, of the American Cancer Society;

Dr. Keith Green, Professor of Ophthalmology and Director of Ophthalmic Research at the Medical College of Georgia;

Dr. George Spaeth, Director of the Glaucoma Service at the Wills Eye Hospital in Philadelphia;

Dr. Kenneth Johnson, Chairman of the Department of Neurology at University of Maryland School of Medicine and Maryland Center for Multiple Sclerosis; Dr. Stephen Reingold, Vice President of Research for the National Multiple Sclerosis Society;

Dr. Donald Silberberg, Chairman of the Department of Neurology at the University of Pennsylvania.

Table 2

Criteria for Designation for a Drug to be Considered as a Medicine*

1) The drug's chemistry must be known and reproducible.
2) There must be adequate safety studies.
3) There must be adequate and well-controlled studies proving efficacy.
4) The drug must be accepted by qualified experts.
5) The scientific evidence must be widely available.

* United States Court of Appeals for the District of Columbia. Feb. 1994. 92-1168 Petition for the review of controlled substance. ALLIANCE FOR CANNABIS THERAPEUTICS V. DEA

TABLE 3

DRUG USE RATES: MARIJUANA

PERCENT OF HIGH SCHOOL SENIORS USE OF MARIJUANA

	1978	1986	1987	1988	1991	1992	1993	1994
LAST 12 MOS-	50.2	39	36	33.1	23.9	21.9	26	30.7
LAST 30 DAYS-	37.1	23.4	21	18	13.8	11.9	15.5	19
DAILY-	10.7	4.0	3.3	2.7	2.0	1.9	2.4	3.6

U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health. National Survey Results on Drug Use, from The Monitoring the Future Study 1975-1993. NIH Publication No. 94-3809 1994.

DrugWatch International

Position Statement on Hemp (Cannabis Sativa)

There is no economically or environmentally sound justification for legalization and reintroduction of hemp cultivation in North America. The campaign to reintroduce hemp/marijuana as a viable agriculture commodity is one of a number of strategies being promoted by the pro–drug lobby to legalize marijuana.

BACKGROUND:

The term "hemp" refers to a variety of plants including sisal, jute, kenaf, manila hemp and true hemp, whose stems and leaves can be used for producing hard fibers. True hemp (*Cannabis Sativa*), commonly referred to as marijuana, was grown in the United States during Revolutionary times primarily for the manufacture of rope and canvas. However, by 1930 United States hemp production had fallen to less than 200 acres and products containing hemp were imported primarily from the Philippines and Mexico. During World War II the Philippines came under control of the Japanese, and farmers in the United States were encouraged to cultivate hemp for the war effort. However, the discovery and mass production of nylon and other synthetic fibers during the war years rendered hemp products all but obsolete and hemp cultivation in the United States ended. Farmers then returned to more useful, productive, and profitable crops.

In pursuit of legalization, the pro–drug lobby has made a wide array of false misleading, and unsubstantiated claims alleging that marijuana/hemp production can save the rain forests and protect the environment by replacing "fifty–thousand" wood, plastic, oil, food and textile products.

The reintroduction of hemp/marijuana as a crop has been proposed for consideration by Canada's Parliament. And, in the United States, petitions are being distributed by the pro–drug lobby to place the hemp/marijuana cultivation initiative on election ballots in several states.

The hemp/marijuana campaign is particularly aimed at high school and college students who are being actively recruited into the pro–drug ideology. This is evidenced by the dramatic rise in marijuana/hemp symbols on youth–oriented products, and pro–hemp/marijuana clubs, and establishments on or near college campuses.

RATIONALE:

The claimed advantages of hemp/marijuana over other raw materials are false. There is no need for products made from Cannabis Sativa (true hemp), as better alternative products exist in every case.

Trees: Nothing can compete with forests for pulp as far as saving energy and using the carbon dioxide in the atmosphere. Contrary to the myth that "we're running out of trees," the U.S. Forest Service reports that timber growth (in cubic feet) exceeds annual harvests by 33 percent. In fact, the number of trees is greater today, an estimated 230 billion, than at any time since the turn of the century. Furthermore, forests are healthier if mature trees are harvested.

Other Plants: Many plants such as corn, sorghum, and alfalfa produce more tonnage per acre, are more soil building than hemp, and are already meeting market demands for alternative fuels, such as ethanol fuel.

COMMITTEES OF CORRESPONDENCE, INC.

An Affiliate of Drug Watch International

24 Adams St., Danvers, MA 01923-2718 (508-774-2641) *"Write Makes Might"*

November 1994

H E M P

by

Sandra S. Bennett, Jeanette McDougal, MM, CCDP
and Special Agent,Wayne Roques, DEA

The term "hemp" has, for many centuries, been applied to a number of different fiber bearing plants. These include true hemp (*Cannabis sativa*), thought to have originated in China and brought to North American where it was widely cultivated during colonial times; abaca or Manila hemp (*Musa textilis*), grown in the Philippines and other Pacific Islands; Sunn hemp (*Crotalana juncea*), a fiber plant harvested in India and other parts of Asia; Mauritius hemp (*Furcraea gigantea*) grown in Africa; New Zealand hemp (*Phormium tenax*); India hemp (*Corchorus capsulans*) also known as "jute;" various forms of sisal (*Agave sisalana*) grown in Africa and the West Indies; and Cuban or Mexican sisal (*Agave fourcroydes*).

Today all of these fibers are used primarily in the manufacture of rope and twine. True hemp (*Cannabis sativa*) is still grown for fiber on a limited scale in Russia and some eastern European nations where it is also grown for birdseed (most of which is devitalized and exported to the west).

It should be noted that "true hemp" (*Cannabis sativa*) is the only one of the hemp fibers which contains a psychoactive ingredient (*tetrahydrocannabinol* or THC).

Since hemp production in the U. S. could not compete practically or economically with plant fibers produced in other countries, by 1933 (five years before implementation of the Hemp Taxation Act) production of true hemp in the United States had diminished to less than 200 acres.

Because the Japanese invasion of the Philippine Islands during World War II put a stop to U. S. importation of Manila hemp (used for marine ropes) it became necessary for the U. S to once again produce its own hemp, and by 1943, 146,000 acres of hemp were harvested for fiber, most of which was used for military purposes.

Source Principles of Field Crop Production
The Macmillan Company, 1949

After World War II and the discovery and increased availability of nylon and other synthetic fibers, all of which were stronger and more durable than plant fibers, production of hemp again declined and even though avenues for importation of the various plant fibers were open, importation on a large scale was never resumed. American hemp farmers returned to pre-World War II food crops but third world countries were not so fortunate.

In the Yucatan Peninsula of Mexico, for instance, Mexican hemp (*Agave fourcroydes*) "once used to make twine and rope that brought great wealth to that part of Mexico..., almost disappeared, driven out by the development of plastics and synthetic rope and cheaper production in Africa and South America." By 1964 the failing Mexican hemp

Plastic & Synthetic Fibers: Hemp fiber is inferior for making rope, twine, and other products where durability and strength are important, because unlike plastic and synthetics, hemp absorbs water, becomes heavy and rots easily.

Cannabis cultivation has caused serious environmental consequences.

The United Nations Drug Control Programme reports that the negative impact of cannabis cultivation upon forest environments in Colombia and Jamaica has been profound. Besides the extensive use of herbicides and chemical fertilizers which are used in the process of cannabis cultivation, deforestation and soil erosion have had significant adverse effects on the environment.

Additionally, hemp/marijuana smoke, like tobacco smoke, contains toxic environmental pollutants including carbon monoxide and a high percentage of carcinogens.

Cultivation of hemp/marijuana as a commercial field crop would increase the problems of drug use and drug trafficking in marijuana, adding enormously to the world's drug problems.

Psychoactive properties (THC content): Of the group of plants referred to as "hemp", only *Cannabis Sativa* contains a psychoactive substance (THC). The level of tetrahydrocannabinol (THC) of a plant cannot be discerned with the naked eye. As a result, hemp/marijuana purportedly grown for legal uses could easily be diverted to the illegal drug market. The costs to monitor such a system would be incalculable.

The current campaign to reintroduce hemp/marijuana in the United States and Canada as a viable and essential agricultural commodity is a subterfuge being employed by the pro–drug lobby to weaken the existing strong public aversion to the legalization and general use of psychoactive and addictive drugs.

industry had been nationalized and though hemp farmers were heavily subsidized the industry did not survive.

Source: New York Times International 8/16/1993

While the various forms of plant fibers referred to as "hemp" are still being grown and used in less developed countries, except as a novelty item hemp, for anything other than garden twine or burlap, cannot compete. The recent effort to "revitalize" the hemp industry in the United States as a panacea for the economic, fuel, clothing, health and fuel problems of the world is unfounded and at best would have a negative impact on struggling hemp industries in many poorer countries.

The environmental, agricultural, and other claims for hemp are no more than a shallow ruse being advanced by those whos believe that revitalizing the hemp industry is a way to legitimize the cultivation and possession of Cannabis sativa (hemp, marijuana, ganga, daga) for use as a drug for getting high. According to pro-drug advocate Eric Sterling,, this is part of the drug culture's "'leaky bucket' strategy. Legalize it (Cannabis sativa) in one area, and sooner or later it will trickle down into the others."

Source: Madamoiselle, September 1993

The practical result of permitting farmers to grow marijuana for its fiber properties is well illustrated by the Netherlands experiment where "growers [of high THC content marijuana used for smoking] routinely escape prosecution by claiming their crops are for legitimate agricultural use such as the production of birdseed or fiber for making rope."

Source: Ben Hirschler, Reuter News Service, January 9, 1993

HEMP CLAIMS vs REALITY

Drug Culture Definition of hemp: "Hemp means the entire Cannabis sativa plant whether male or female, except for cannabis."

Source: Colorado Hemp Initiative, 1994

REALTIY: Hemp (true hemp) is *Cannabis sativa*. Although "hemp" is a term used to describe a number of hard fiber plants, including *Cannabis sativa* or "true hemp," it is increasingly being used interchangeably with the terms "marijuana, bud, chronic, blunt, dope," etc., by those promoting legalization of drugs.

Drug Culture Claim: "Hemp can save the rain forest."

REALITY: There is no direct link between growing hemp and saving the rain forest(s). Any indirect link is obscure and like saying that "cleaning one's plate will eliminate world hunger."

Drug Culture Claim: "Hemp benefits the soil."

REALITY: "Field crops such as corn, sorghum, alfalfa, and many other field crops produce more tonnage per acre than hemp. In fact, compared to crops like alfalfa, hemp is very inferior in not only yield but in preventing erosion, and does not add nitrogen to the soil. Hemp is an annual crop and production is just as damaging to soil productivity and loss of soil from erosion as most of the common field crops.

and more damaging than some. They speak of hemp's strong roots preventing soil erosion but hemp's roots are hardly unusual. Corn and other grass crops do a better job in this respect because they have more extensive, fibrous root systems." [1]

Drug Culture Claim: "Hemp can save the environment."

REALITY: "Hemp is an annual crop. Every year the soil would have to be prepared. It would have to be cultivated and plowed leaving no vegetative cover on the ground to give off oxygen into the atmosphere." [1]

"The expenditure of energy to produce an annual hemp crop, whether from gasoline or other fuels, or from the lungs of animals or humans, would produce and release carbon dioxide into the atmosphere." [1]

Drug Culture Claim: "Hemp (*Cannabis sativa*) has 'hundreds' of therapeutic benefits."

REALITY: In 1982 A Surgeon General's warning was issued against hemp/marijuana use by then Surgeon General C. Everett Koop. In February of 1994 hemp/marijuana was disallowed as a "medicine" by the U. S. Dept. of Health and Human Services, the National Institutes of Health, and the DEA because it has repeatedly failed to meet any of the criteria used by the FDA for approving a substance as a medicine.

Additionally, hemp has a highly allergenic pollen. In a test of 90 patients suffering from allergies, 70% tested skin reactive to marijuana pollen as opposed to 20% for tobacco leaf. Allergy to hemp pollen is common. [2]

"The essential oils found in hemp seeds are vastly inferior in quantity and quality to essential oils found in crops such as flax seed and soy bean." [3]

Drug Culture Claim: "Hemp needs no chemical fertilizers."

REALITY: "In countries where hemp is grown commercially pesticides and fertilizers are used similarly as they are with all other commercial crops." [1]

"Fertilizer need depends on yield. High yield removes more nutrients from the soil than do low yields." [1]

According to U. S. law enforcement officers large caches of high nitrogen fertilizers and rodenticides are found at illegal hemp (marijuana) growing sites.

Drug Culture Claim: "Hemp is superior to and more abundant than wood pulp for making paper."

REALITY: "Nothing can compete with forests for paper pulp as far as saving energy and absorbing carbon dioxide from the atmosphere. Many fast growing trees are being used for this purpose and new ones are being developed. For example, a crop of Minnesota aspen trees harvested about every 15 to 20 years for paper pulp is far more energy efficient and vastly more efficient at removing carbon dioxide from the atmosphere than hemp or any other annual plant. With proper management, aspen forests regenerate themselves and are healthier when mature trees are systematically harvested." [1]

Drug Culture Claim: "Hemp is needed as a substitute for petroleum."

REALITY: "The claim that hemp is needed to replace petroleum fuel is misleading because corn is already meeting market demands for vegetable-based ethanol fuel. Other more economically produced plants such as sorghum, sugar cane, and sugar beets can be and are being used worldwide for that purpose. For replacing petroleum oil in pesticide sprays, oil seed crops such as soybeans, sunflower and flax are already being used." [1]

Drug Culture Claim: "Hemp fiber is needed by the textile industry."

REALITY: "Cotton is the number one fiber crop of the world because it is the cheapest and most useful. For finer cloths, there is linen from flax." [1]

"Although hemp can be grown commercially in Europe and many other areas, it is not a major crop nor a necessity, and while it could be a useful crop for a special market, it is not essential and would complicate enforcement of drug laws. " [1]

"...it would make far more sense for U. S. industry to consider returning to the use of agricultural residues which are grown for other purposes, such as wheat straw, seed grass straw and grain sorghum stalks, rather than attempting to grow a plant just for its fiber content, such as kenaf and hemp." [4]

Drug Culture Claim "Hemp would prevent deforestation."

REALITY: "(T)o dispel a commonly held myth, the great forests of the U.S., though smaller than in times past, have certainly not disappeared. The nation's forest land base of 731 million acres is still about two-thirds the size it was when European settlement began along the eastern seaboard in the 1600s." [5] In fact, "the number of trees is greater today - an estimated 230 billion - than at any time since the turn of the century, and timber growth (in cubic feet) exceeds annual harvest by 33 percent." [6]

"Some of the world's most productive and best-managed forest lands are located in the United States. We should continue... to manage them responsibly for the benefit of all." [5]

Footnotes:

1 Robert G. Robinson, Ph.D., Professor Emeritus, University of Minnesota Department of Agronomy and Plant Genetics (Dr. Robinson grew hemp for crop research purposes for the University of Minnesota.)

2. G. L. Freeman, M.D., Western Journal of Medicine, June 1983; 138:829-831

3. Professor Bruce J. Holub, Ph.D., Department of Nutritional Sciences, University of Guelph, Guelph, Ontario, Canada

4 Joseph E. Atchison, Ph.D., International Consultant to the Pulp and Paper Industry

5 Jim Bowyer, Head, Dept. of Forest Products, University of Minnesota, *The Oregonian* 11/1/93

6 Figures from U. S. Forest Service. Adapted from "The Truth About America's Forests." Evergreen, 4025 Crater Lake Highway., Medford, Oregon 97405

December 1994 (Rev. 2)

STATISTICS ON THE NETHERLANDS

1990-1995 11-18 Y/O WHO EVER USED MARIJUANA INCREASED FROM 7 TO 17%

PEAK USE AGE 16-17

9% WHO STARTED IN 1990 STILL USING

2% WHO STARTED USING IN 1985 STILL USING IN 1990

Spanjer M., Dutch Schoolchildre's Drug Taking Doubles The Lancet 1996:347:534

1988-1992 CANNABIS USE AMONG PUPILS INCREASED 110%

1984 TO 1992 INCREASED BY 277% IN MALE PUPILS AGE 12-18

Zwart WM, Mensink C., "Alcohol, Tabak, Drugs en Gokken in cijfers," National Institute for Alcohol and Drugs, 1993, Rotterdam.

SHOOTINGS UP 40%

(HOMICIDES 14.8/100,000 VS 9.5 IN US-LONDON SUNDAY TELEGRAPH)

CAR THEFTS UP 62%

HOLD-UPS UP 69 %

Recherche 1993, Criminal Investigation Department. Centrale Recherche Informatie 1993 report, Rotterdam 1993.

ADDICT STATS FOR THE NETHERLANDS

FROM 1991-1993 THERE WAS A 49% RISE OF REGISTERED CANNABIS ADDICTS

FROM 1174 IN 1991 TO 1749 IN 1993. THE TOTAL NUMBER OF ADDICTS

REGISTERED WITH THE CONSULTATION BUREAU FOR ALCOHOL AND DRUG

PROBLEMS HAS RISEN 22% SINCE 1988 TO 54171 ADDICTS IN 1993 OF WHICH

25278 WERE NEW ADDICTS.

ORGANIZED CRIME GROUPS: 1988 (3) 1991 (59) 1993 (93)

K.F.GUNNING, M.D.PRESIDENT DUTCH NATIONAL COMMITTEE ON DRUG PREVENTION
ROTTERDAM, HOLLAND 2/20/95

Mr. MCCOLLUM. Thank you very much, Dr. Voth.

Ms. Haynes, you may proceed to give us either your full or some summary of your testimony.

STATEMENT OF STEPHANIE HAYNES, PRESIDENT, DRUG WATCH INTERNATIONAL

Ms. HAYNES. Thank you, Congressman McCollum, and thanks to the Members of the House.

It is a great privilege to have the opportunity to come before you today. I commend you for holding these hearings and for recognizing the importance of addressing the serious concern of rising drug use among America's youth.

As president of Drug Watch International, I represent drug prevention experts from the United States and many countries: educators, physicians, attorney, law enforcement officials, business and other community leaders, and parents, all of whom are deeply concerned about the drug problem and who have key players in the worldwide drug prevention movement. This movement of dedicated parents and community leaders was instrumental in bringing national and international attention and common-sense solutions to the drug problem, resulting in the dramatic decline in drug use which occurred over the past few years.

The drug prevention movement helped create an atmosphere of social intolerance towards the use of mind-altering and addictive substances. Pro-legalization advocates and some in the media claim that the War on Drugs has been lost and that the only hope is to change drug policies and legalize drugs. They are wrong. The commitment to confront the drug crisis through a War on Drugs type of campaign rose out of strong national leadership and a strong grassroots drug prevention movement. The War on Drugs is a war of the people, all people, working together and speaking with a united voice against the harmful and illegal use of drugs.

The War on Drugs, as you have mentioned, has been successful, despite what the headlines have reported. In 1977 over 50 percent of high school seniors reported having used marijuana in the past year and 1 in 10 were stoned on marijuana every day. Through effective prevention and demand reduction initiatives, illicit drug use, both casual and heavy, was reduced by half over a 12-year period. If we could reduce teen pregnancy or adolescent violence by 50 percent, would anyone call that a failure and demand that we change direction?

We have a long way to go, but the solution is not to turn the clock back to the drug-tolerant and permissive policies of the 1970's. Our memories are short. It's as if we are back to the seventies again. Rock music and movies are again glamorizing drug use. Young people are glorifying the cultural icons of the seventies.

There are a number of theories of why drug use is on the rise, which include—many of you I'm sure have heard this—loss of national focus and leadership, cuts in Federal initiatives and programs, a weakened parents' movement, and a new generation of parents, many of whom are not knowledgeable about the harmfulness of drugs, or who are defensive of their own past or present drug use.

What you have probably not heard much about is the story of the influence of the organized pro-drug movement. A major contributing factor to increased drug use, especially by youth, is the sophisticated and well-financed public relations campaign being waged by pro-legalization advocates. Their goal is the creation of a climate tolerant of drug use and laws making drugs legal and available. If they are successful, we will see another epidemic of drug use like we did in the 1970's.

Now we recognize that there are well-meaning people who support the concept of drug legalization. Some are liberal and some are conservative. Although they have come to the wrong conclusion about how to address the drug problem, most of these people are well-intentioned. However, there are those who are self-servingly promoting drug legalization. These people and organizations who advocate for the permissive use of illicit drugs represent only a small percentage of the population. The majority, not all, are drug users themselves with a self-centered, elitist agenda.

They believe they have the right to alter their consciousness through the use of psychoactive and addictive drugs, ignoring the tremendous cost to the rest of society. Pro-legalization advocates complain that the legalization issue has not been given fair debate. We believe that debating the merits of legalizing dangerous drugs is a waste of valuable time and energy. It is the same debate as it was in the seventies. No new arguments have been presented. Debating this issue is like debating whether racism or pedophilia should be considered. Science, history, and common sense have proven the destructiveness of drugs.

Pro-drug organizations are active, politically astute, and well-financed. They have powerful political and financial connections. They're adept at influencing the media and using electronic media such as the Internet to promote their pro-drug ideology. Most Americans have no idea that an elaborate, pro-drug propaganda scheme has been unfolding. And a scheme is the best was to describe it. Pro-drug groups have found more politically correct techniques and a wide range of deceptive tactics to accomplish their goal. They advise their members not to use the "L" word and to better frame the legalization argument.

Their de facto legalization strategies include: marijuana cigarettes as medicine; the harm reduction or responsible use concept of drug use; free needles to addicts for AIDS prevention, and, industrial hemp to save the environment. Legalization proponents work to secure positions on key government and policy boards without disclosing their pro-drug bias. They give large cash awards to pro-legalization politicians. Some of their leaders have been consultants to Congress, the GAO, and the White House. Pro-drug groups sponsor hemp rallies and clubs on high school and college campuses across the country.

The drug lobby's legislative agenda is focused on weakening or eliminating drug laws and policies, deemphasizing law enforcement and interdiction, and even influencing international treaties and United Nations conventions. The drug lobby claimed a victory when H.R. 3100, which called for the establishment of a Federal Commission on Drug Policy, was passed as part of the crime bill of 1995 under title XXVII. They said that the establishment of such

a Commission to review and revise all local, State and Federal drug laws, was their big chance to humiliate the drug warriors.

"The pro-drug marketing campaign has been more successful than their wildest dreams," said one of their leaders. The pro-drug proponents are frequently cited as the experts in various publications and as consultants for mainstream television and radio programs.

I brought some items for your review. Some of these are T-shirts and hats, all that glorify marijuana use, items that are given out at some of these hemp fests to our kids, and this is the Hempilation CD, which is a very popular CD. Every song on this CD glorifies marijuana, and some of the proceeds from this CD are going to support NORML and the drug legalization movement.

Pot culture is definitely back in vogue. Headlines read, "Hello Again, Mary Jane." Radios blare songs like "I Wanna Get High" and "Legalize It" by Columbia Records. The movie "Tommy Boy" opens with "Saturday Night Live" star and teenage idol Chris Farley smoking a bong and passing out. On MTV's "Straight Dope" program, marijuana is claimed to be no more harmful than coffee. And the Adidas company is now marketing a new sports shoe called the "Hemp" shoe.

On the Internet thousands of messages from pro-drug advocates promote that marijuana and other illicit drugs improve health, enhance sexual experiences, increase creativity, and are good for the environment. America's kids are not just once again turning on, tuning in, and dropping out; they are now logging on, jumping in, and believing every word. Is it any wonder that young people are getting the wrong message? For all their activity and money, for all their lobbying, pro-drug advocates cannot say that they've done anything to keep one child off of drugs. What they're doing by pushing the pro-drug agenda is unconscionable.

The marijuana-related shooting death of 16-year-old Marc Steir on January 13, 1994, in Prior Lake, MN, is a case in point. Marc and his new group of friends, according to his parents, were smoking marijuana and playing Russian roulette. One of the boys held a loaded gun to Marc's head and pulled the trigger. Before his death, Marc had told his family, "What's the big deal about marijuana? Cancer patients are using it and they're talking about making it legal."

The answer to rising drug use by America's youth is bold leadership—especially from the White House and Congress—a revitalized national antidrug strategy, and a reenergized parents movement. The use of illicit drugs can be reduced by strengthening sanctions against drug users, increasing the public aversion toward drug use, and by major education programs aimed at adults in the work place and young people in schools. It is critical that leaders like yourselves help to spread the truth about this insidious threat. History does not need to repeat itself. Our political leaders and the media must assume a responsible role in this critical mission to create a healthier, safer, and more secure world.

I thank Congressman McCollum and Congressman Conyers, and the other members of the committee, for your statements. We encourage you to continue to use the bully pulpit and do not weaken

laws, but rather strengthen laws against drug users. Thank you for this opportunity.

[The prepared statement of Ms. Haynes follows:]

PREPARED STATEMENT OF STEPHANIE HAYNES, PRESIDENT, DRUG WATCH INTERNATIONAL

It is a great privilege to have the opportunity to come before you today. I commend you for holding these hearings and for recognizing the importance of addressing the serious concern of rising drug use, especially among America's youth. As President of Drug Watch International, I represent drug prevention experts from the United States and many countries, educators, physicians, attorneys, law enforcement officials, business, other community leaders, and parents—all of whom are deeply concerned about the drug problem and who have been key players in the worldwide drug prevention movement.

This movement of dedicated parents and community leaders was instrumental in bringing national and international attention and common sense solutions to the drug problem, resulting in the dramatic decline in drug use, which occurred over the past few years. The drug prevention movement helped create an atmosphere of social intolerance towards the use of mind-altering and addictive substances.

Pro-legalization advocates and some in the media claim that the "War on Drugs" has been lost, and that the only hope is to change drug policies and legalize drugs. They are wrong. The commitment to confront the drug crisis through a "War on Drugs" type of campaign rose out of strong national leadership and a strong grassroots drug prevention movement. The "War on Drugs" is a "war" of the people—all people—working together and speaking with a united voice against the harmful and illegal use of drugs.

The "War on Drugs" has been highly successful, despite what the headlines have reported. In 1977, over 50% of high school seniors reported having used marijuana in the past year and 1 in 10 were stoned on marijuana every day. Through effective prevention/demand reduction initiatives, illicit drug use, both casual and heavy, was reduced by half over a 12 year period. [The number of overall users of illegal drugs declined from 24 million to 11.4 million (over 50%). Daily use of marijuana by high school seniors decreased from 10.7% to 2.4% (over 7%)].

If we could reduce teen pregnancy or adolescent violence by 50% to 75%, would anyone call that a failure and demand that we change direction?

We have a long way to go, but the solution is not to turn the clock back to the drug tolerant and permissive policies of the 1970's. Our memories are short. It is as if the 1970's are here all over again. Rock music and movies are again glamorizing drug use. Young people are glorifying the cultural icons of the 70's. The rise in adolescent drug use is an ominous sign. Drug related emergency room admissions, school vandalism, truancy, crime, and violence are on the rise.

There are a number of theories of why drug use is on the rise, which include loss of national focus and leadership, cuts in federal initiatives and programs, a weakened parents movement, and a new generation of parents, many of whom are not knowledgeable about the harmfulness of drugs, or who are defensive of their past or present drug use.

What you have probably not heard is the story of the influence of the organized pro drug movement. A major contributing factor to increased drug use, especially by youth, is the sophisticated and well financed public relations campaign being waged by pro-legalization advocates.

Their goal is the creation of a climate tolerant of drug use, and laws making drugs legal and available. If they are successful, we will see another epidemic of drug use like we did in the 1970's. We recognize that there are well meaning people who support the concept of drug legalization, some are liberal some are conservative. Although they have come to the wrong conclusion about how to address the drug problem, most are well intentioned.

However, there are those who are self-servingly promoting drug legalization. Those people and organizations who advocate for the permissive use of illicit drugs represent only a small percentage of the population. The majority, not all, are drug users themselves with a self centered, elitist agenda. They believe they have the right to alter their consciousness through the use of psychoactive and addictive drugs, ignoring the tremendous cost to the rest of society.

Pro-legalization advocates complain that the legalization issue has not been given fair debate. We believe that debating the merits of legalizing dangerous drugs is a waste of valuable time and energy. It is the same debate as it was in the seventies. No new arguments have been presented. Debating this issue is like debating wheth-

er racism or pedophilia should be considered. Science, history, and common sense have proven the destructiveness of drugs.

Make no mistake about it—We are in a battle for our children—for the very future of our country. It is a David & Goliath struggle against an enemy who will go to no end to defend their right to use drugs.

Pro-drug organizations are active, politically astute, and well financed. They have powerful political and financial connections. They are adept at influencing the media and using electronic media such as Internet to promote their pro-drug ideology.

Most Americans have no idea that an elaborate pro-drug propaganda scheme has been unfolding. And scheme is the best way to describe it. Pro-drug groups have found more "politically correct" techniques and a wide range of deceptive tactics to accomplish their goal. They have advised their members not to use the "L" (legalization) word and to better frame the legalization argument.

Their (de facto) legalization strategies include:

Marijuana cigarettes as medicine;

The "harm reduction" or "responsible use" concept of drug use;

Free needles to addicts for AIDS prevention; Industrial hemp to save the environment;

Taxation and government regulation of illicit drugs; and

Reduction of mandatory minimum sentences and other sentences for drug traffickers, especially for marijuana criminals.

Legalization proponents work to secure positions on key government and policy boards, without disclosing their pro-drug bias. They give large cash awards to pro-legalization politicians. Some of their leaders have been consultants to Congress, the GAO, and the White House. Pro-drug groups sponsor hemp rallies and clubs on high school and college campuses across the country. The movement is supported by groups and financed by a few wealthy individuals such as billionaire George Soros.

The drug lobby's legislative agenda is focused on weakening or eliminating drug laws and policies, de-emphasizing law enforcement and interdiction, and even influencing international treaties and United Nations conventions.

The drug lobby claimed a victory when HR 3100, which called for the establishment of a Federal Commission on Drug Policy, was passed as a part of the Crime Bill of 1994 under Title XXVII. They said the establishment of such a commission to review and revise all local, state, federal drugs laws was their "big chance to humiliate the drug warriors."

The founder of (NORML), the National Organization for the Reform of Marijuana Laws, told Emory University Students in 1970 that NORML would help reclassify marijuana as medicine "as a red herring to give marijuana a good name." This has been the mantra of the pro-drug lobby ever since. They have grand hopes of passage of (HR 2618), which would make smoked marijuana available by prescription. (Sponsor: Congressman Barney Frank)

The pro-drug marketing campaign has been "more successful than their wildest dreams," says one of the leaders. Pro-drug proponents are frequently cited as "the" experts in various publications and as consultants for mainstream television and radio programs.

Pot culture is back in vogue. The taboo against glorifying drug use, which existed during the 1980's, has disappeared.

Headlines read "Hello Again, Mary Jane." (Time 4–19–93) Radios blare songs like "I Wanna Get High" and "Legalize It" by Columbia Record's Cypress Hill band. The movie Tommy Boy opens with Saturday Night Live star and teenage idol Chris Farley smoking a bong and passing out. On MTV's "Straight Dope" program (8–23–94) marijuana is claimed to be no more harmful than coffee. The Adidas company is now marketing a new sports shoe called the "Hemp" shoe.

On the Internet, thousands of messages from pro-drug advocates promote that marijuana and other illicit drugs improve health, enhance sexual experiences, increase creativity, and are good for the environment. America's kids are not just once again "turning on, tuning in, and dropping out," they are now "logging on, jumping in," and believing every word!

Is it any wonder that young people are getting the wrong message! Research has shown that there is a direct correlation between the perception of risk related to the harmfulness of drugs and drug use itself.

Surveys show that today fewer students feel that marijuana, cocaine, LSD or inhalants are harmful to health.

For all their activity and money and for all their lobbying, pro-drug advocates cannot say they have done anything to keep one child off of drugs. What they are doing by pushing the pro-drug agenda is unconscionable.

The marijuana-related shooting death of 16 year old Marc Steir on January 13, 1994 in Prior Lake, Minnesota is a case in point. Marc and his new group of friends, according to his parents, were smoking marijuana and playing Russian roulette. One of the boys held a loaded gun to Marc's head and pulled the trigger. Before his death, Marc had told his family, "What's the big deal about marijuana? Cancer patients use it. They're talking about making it legal!"

The answer to rising drug use by America's youth is bold leadership, especially from the White House and Congress, a revitalized national anti-drug strategy and a re-energized parents movement. The use of illicit drugs can be reduced by strengthening sanctions against drug users, increasing the public aversion towards drug use, and by major education programs aimed at adults in the workplace and young people in schools.

Once again concerned citizens, and especially parents, must rise to the occasion and speak out against drug use and pro-drug propaganda. It is vital that national leaders like yourselves help to spread the truth about this insidious threat. History does not need to repeat itself. Our political leaders and the media must assume a responsible role in this critical mission to create a healthier, safer, and more secure world. The future of our nation, especially of our young people, is at stake.

Drug Watch International respectfully requests that the Congress of the United States consider the following recommendations:

Conduct extensive hearings about the drug problem in general to investigate what works in both drug demand reduction and supply reduction, and including the activities and influence of the pro-drug lobby in federal and international programs, agencies, policies, and laws.

Drug prevention and treatment funding should be a priority. The Departments of Education and Health & Human Services should be required to spend a higher proportion of their budgets on drug prevention and treatment.

Establish accountability standards and measures for all drug programs. and evaluate results.

Ensure the enforcement of existing drug laws, holding drug users accountable, especially consequences for first time offenders, including fines, loss of benefits, and mandatory drug testing and treatment where appropriate .

Require that all educational materials and programs funded by tax dollars promote a clear consistent message of no unlawful use of drugs.

Encourage policies and support existing laws to prevent the marketing of illegal products

Encourage the entertainment industry and other businesses that influence young people to adopt a responsible role in promoting a drug free message.

For more information, please contact Drug Watch International at P.O. Box 1454, Elm Hurst, IL 60126–2127. E-mail address: Drug Watch @lec.org; Internet address: http://www.lec.org/Drug—Watch/.

Mr. MCCOLLUM. Thank you, Ms. Haynes, for coming today and spending time with us to present those views.

Officer Hayes, you're next. If you would like to summarize your statement or present any portion of it, please proceed.

STATEMENT OF DONALD HAYES, OFFICER, ALEXANDRIA, VA, POLICE DEPARTMENT

Mr. HAYES I thank you, Mr. Chairman and members of the committee. Thank you all for inviting me here this morning.

I think this is a very important topic. I've been a police officer now for 15 years and the people in the city of Alexandria know me as the DARE officer, especially the kids there. Alexandria is a pretty unique city in itself in that we have a very large population with what I consider to be a very small sworn force, 275 officers. But Chief Charles Samarra, who is our chief, thinks it's important enough for him to even take one member from that staff to emphasize the importance of the DARE program to prevent the kids from using drugs. And we've had a very successful rating there in Alexandria, whereas in the last 2 years our crime rate has continually started to go down.

It might be helpful if I tell you a little bit about the DARE program. DARE stands for Drug Abuse Resistance Education. It was started in 1983 out of Los Angeles, CA, by the Los Angeles Police Department with the unified school district. It was a joint effort to combat the problems they were having in their schools with the kids starting to use drugs at a very young age. The program caught on and the program is now worldwide with over 24,000 police officers teaching kids in the schools how to resist the social pressures in experimenting with alcohol, tobacco, marijuana, and other illegal drugs.

This is done by working to build up children's self esteem and to show them positive alternatives to drug use. Being a DARE officer means a great deal to me because when I first started in the police department we didn't have anything that would actually get us into the schools. The Officer Friendly Program had kind of died out and we weren't getting in the schools as much as we should have been.

But now I get a chance to work with young people every day and I get a chance to see the statistical figures that you all are talking about, face to face. And I get a chance to see how they are being encouraged to use drugs at a very young age. DARE has done a lot in Alexandria beyond teaching young people about alcohol, tobacco, and drugs. The program has helped break down barriers of negative perceptions about the police and young people. I feel very close to the kids that I see in my DARE class and I want them all to have the self-esteem and confidence that they'll need to make the right decisions later on in life.

The DARE classroom provides me a nonthreatening environment where the kids can ask questions and see a DARE officer up close and not be afraid that we're there for a hostile reason, like they do when we come into their neighborhoods half the time. And they'll release themselves and they'll talk to us about problems and things that are happening. I really believe that the DARE program is community policing at its best.

We have a serious problem today with some of our young people. Drug use is a major contributor to the problems that we are seeing. I believe kids are being exposed earlier to substance abuse than in the past, and it is making it harder and harder to get the kids headed in the right direction. I'm afraid that the media, as you said earlier, and Hollywood moviemakers are not making the situation any easier by glamorizing the fact that drug use is cool. I see many solid kids who are going to school and trying to get a good education. Unfortunately, again, the media and the movies don't spend much time telling us about the success stories. Very rarely will you see a movie or a story about a kid who's in school getting straight A's. It's always the kids who are using drugs and are doing other things that they want to tell us about.

My experience in working and talking with the supervisors and officers in the street crimes unit and the vice narcotics section, would indicate that the kids are being exposed to the drugs at a younger and younger age. Part of this is probably because older kids are doing these things and the younger kids are actually seeing them. And in some cases, parents are actually using these particular drugs too, such as marijuana.

Even with my fifth graders, we have a part in the DARE program where they do role playing, and when they do the role playing it is so realistic. The kids can actually give us scenarios and they act out the part about smoking what is called a blunt, and that's basically a cigar where the tobacco is taken out and marijuana is put in. And it's just too realistic for a fifth grader not to have seen this to be able to role play this situation. And that gives me the impression that they are really seeing this, either in their homes or in the streets, but they're seeing it somewhere. And it's giving them the impression that it might be OK to do it. This is very dangerous because the harmful effects of the THC from the marijuana coupled with the cancer causing aspects of tobacco.

In closing, I would like to suggest that the DARE program be expanded throughout all school curriculum. I would recommend that we start earlier than the fifth grade with our visitation programs, from kindergarten through fourth grade, and that we work with kids in middle school and senior high school. It is interesting to see that we take a very serious interest in our kids as far as giving them English and math and science from the kindergarten all the way through high school, but we're only giving them a very small portion of substance abuse training. And I think that if we continued on and followed them through from the beginning to the end, I think that we would see better results.

We're doing something very unique in Alexandria, where we start off in fifth grade with one particular officer and that officer is going to start following these students all the way through their high school. He's going to do the DARE program with them, he's going to have recess with them, have lunch with them, and just interact with them as much as he can to try to stem this problem that we're starting to see with the kids starting to use drugs at an earlier and earlier age.

Finally, parents need to do more in working with their children at home to prevent drug abuse. Young people respond to what they see at home and their parents have to set a positive model that their kids can follow. Parents cannot expect the schools or the DARE officers to solve the problems of substance abuse. They must set the tone right from the start at home. We're only with them maybe 4 or 5 hours out of the day. They are with the parents on the weekends and all the rest of the day. And I believe that they really look for role models in their parents. They shouldn't be looking at football players or anybody else to role model. I believe they should be looking for their parents to set the right example and that's who they should be following.

I appreciate the opportunity to testify today and I will be happy to respond to any questions you might have.

[The prepared statement of Mr. Hayes follows:]

PREPARED STATEMENT OF DONALD HAYES, OFFICER, ALEXANDRIA, VA, POLICE DEPARTMENT

Mr. Chairman and Members of the Committee , Good morning. My name is Donald Hayes. I have been a police officer with the Alexandria, Virginia Police Department for the past 15 years and work in the Crime Prevention Unit. Most of the young people in Alexandria know me as their DARE Officer. I was born and raised in Washington, D.C., I am married with two children and now live in the City of Alexandria.

The Alexandria Police Department has 275 sworn officers and 130 civilian members. Our Chief, Charles E. Samarra has been very supportive and proactive in promoting better police/community relations through crime prevention and community policing. We are very proud to be able to say that our serious crimes have gone down over the past two years.

It might be helpful if I first tell you a little about the DARE program. The Drug Abuse Resistance Education program (DARE) was first started in Los Angeles in 1983 as a joint program with the Unified School District. It has caught on around the country and the world and today over 24,000 police officers are teaching young people how to recognize and resist the social pressures to use or experiment with alcohol, tobacco, marijuana and other drugs. This is done by working to build up children's self-esteem and show them positive alternatives to drug use.

Being a DARE Officer means a great deal to me because it gives me a chance each and every day to work with young people. When I first become a police officer, there was no DARE program and most of the time when I had contact with young people it was usually when they were in trouble. I realized that many young people were afraid to talk to me and really didn't trust me.

DARE has done a lot more in Alexandria beyond teaching young people about alcohol, tobacco and drugs. The program has helped breakdown barriers and negative perceptions about police and young people. I feel very close to the kids I see in my DARE classes and I want them all to have the self-esteem and and confidence they need to make the right decisions later in life.

The DARE classroom provides a non-threatening environment where kids can ask questions and see their DARE Officer not just as a Police Officer, but someone who really cares about them. I really believe that the DARE Program is community policing at its best!

We have a very serious problem today with some of our young people. Drug use is a major contributor to the problems we are seeing. I believe kids are being exposed earlier to substance abuse then in the past, and it is making it harder and harder to get these kids headed in the right direction.

I'm afraid the media and the Hollywood movie makers don't help the situation when they glamorous drugs or show the public only the negative side of young people today. I see many solid young kids who are going to school and trying to get a good education. Unfortunately, the media and the movies don't spend much time telling us about the "success stories."

My experience in working and talking with the supervisors and officers in the Street Crimes Unit and Vice Narcotics Section would indicate that kids are being exposed to drugs at a younger and younger age. Part of this is probably due to seeing older kids and in some cases, even their parents using drugs such as marijuana. Even with my 5th graders, when we role play situations, the kids act out very real situations such as smoking "blunts." (Cigars where the tobacco is replaced with marijuana.) This is very dangerous because of the harmful effects of THC from the marijuana, coupled with the cancer causing aspects of tobacco.

In closing, I would suggest that DARE be expanded throughout the school curriculum. I would recommend that we start earlier than the 5th grade and that we work with the kids in middle and senior high school. It is interesting to me that kids learn Math and and English throughout their schooling but we expect our young people to limit their drug education to 5th and 6th grade. Young people need the tools and encouragement to work through many tough issues that can lead to substance abuse as they advance through school. We are expanding are DARE programs in Alexandria to include these upper grades and we are trying to keep the same officers with the young people as they progress through school.

Finally, parents need to do more in working with their children at home to prevent drug abuse. Young people respond to what they see at home and their parents have to set a positive model that kids can follow. Parents can not expect the schools or DARE officers to solve the problem of substance abuse. They must set the tone right from the start at home.

I appreciate the opportunity to testify today, and would be happy to respond to any questions.

Mr. McCollum. Thank you very much, Officer Hayes.

Mr. Hedrick. You're recognized.

STATEMENT OF THOMAS A. HEDRICK, JR., VICE CHAIRMAN, PARTNERSHIP FOR A DRUG-FREE AMERICA

Mr. HEDRICK. Thank you, Mr. Chairman. And I want to tell you how important I think your calling this hearing is, along with efforts that Mr. Schumer has made.

When the Congress and the administration highlight this issue and say it's important, the media and the public pay attention and act. Quite frankly, when you don't, we don't and they don't. So this is an important step. The fact that millions of our children are now using marijuana is a tragedy that all of us should work harder to change, not just because marijuana has serious consequences for the lives of these kids and their families, but also because it can lead to other drug uses that are correlated with higher levels of violence and other health and emotional problems.

Our clear, consistent, and unambiguous message to our children, from all adults who influence children, must be marijuana is not a harmless drug. Prior to the recent reversal, the Nation had made extraordinary progress in reducing marijuana use. From the late seventies to the early nineties the percentage of our kids who have tried marijuana declined by more than 50 percent. That progress is proof that we as a society are not powerless against the drug problem. The evidence is clear that drug use is a preventable behavior when we pay attention.

Preventing marijuana and other drug use by young people, in our opinion, and all who influence them, must be the first principle of National, State, and local strategies. We must recognize that drug use is a process, a process that begins with one child at a time—my son, your children, your grandchildren—making a decision whether or not to use marijuana and other drugs. And these decisions are occurring millions of times every day in every city and town across America.

The fact is that we know how to effectively and successfully communicate with kids to positively affect their decisions about drug use. When we, as a society, persuade our kids that marijuana use is harmful and socially unacceptable, that no use is the expected behavior, then marijuana and other drug use goes down. It's almost that simple. A restrictive drug policy is in fact essential to that process.

These numbers we've talked about earlier, but I think it's nice to see them in visual form to show the point.

[Chart shown.]

Mr. HENDRICK. All of us who influence children have recently been less successful in educating our children about the harmfulness of marijuana. And of all the factors affecting marijuana and other drug use by our youth, the most important are attitudes, the way they see the drug and its use. The perception of harmfulness of using marijuana tripled from 1979 to 1991 and that increase is almost solely responsible for the decrease by half in its use. The perception of harmfulness is critical to this process. The other key determining attitude for marijuana use is the perception of social disapproval, a measure of the unacceptability and the perceived social norm. After doubling since 1979, the recent erosion in this key attitude has been the other major reason why marijuana use has increased.

The most severe and frightening attitude and usage changes are among our youngest teens, eighth graders—kids who are 13 and 14 years old. The average age of initial trial in 1995 of marijuana was 13½. This means in an average eighth grade class of 25, 4 have already tried marijuana. The good piece of news in this chart is that the rate of increase appears to be slowing down. We hope that this is a sign that marijuana use is beginning to peak among our kids.

I believe we know with certainty, Mr. Chairman, that the recent increase in marijuana and other drug use is due to our children's view that drug use is less harmful and more socially acceptable. We believe that this is due to a change in the balance of information, and in particular about marijuana, that we adults are sending and our children are receiving from many different sources. The overall result is fewer antidrug messages and more pro-drug messages.

Last summer in Washington, the National Institute on Drug Abuse held a 3-day conference that covered recent scientific evidence that, taken together, shows clearly that marijuana use by children in and of itself has serious implications for their physical, mental, and psychosocial development. This new research also showed that using marijuana is a real risk factor that can have broad implications for the lives of our children and their families. More research like this is urgently needed to reinforce the message that marijuana is not a harmless drug. We can convince our youth in intelligent and credible ways that marijuana is harmful and socially unacceptable; then we will be successful in reversing the recent and disturbing trends.

The last chart is new research from an annual attitude and tracking study that was released February 20 and shows, as the DARE officer so effectively said, that effective prevention must start with parents. Teens who have learned of the risks of marijuana from their parents are half as likely to use as those who haven't learned from their parents. The National Institute on Drug Abuse has developed new materials, including these two pamphlets, for parents and their young teenagers to help reinforce this critical part of antidrug information. And Dr. Alan Leshner, who is Director of NIDA, will send to this subcommittee examples of those materials along with the marijuana conference.

[The information was not received by time of printing.]

Mr. HEDRICK. I want to close my testimony with some examples of what we at the partnership are doing to try to help educate kids and their parents through the media that marijuana is harmful and socially unacceptable. I believe that our work is necessary, but I also understand that our work alone is not sufficient. We will also work with and support General McCaffrey's efforts. But America needs more prevention resources that can cost-effectively catalyze prevention programs, particularly at the community level, and particularly by parents and through comprehensive in-school education.

And, quite frankly, Mr. Chairman, and this committee, America most importantly needs your leadership to clearly set and reinforce that reducing drug use is a key priority for America and for all of us, and to say, unequivocally, that each of us has a role to play in

the solution because all of us have a stake in the outcome. And, in my opinion, that simply must include a restrictive drug policy, including marijuana.

[Videotape shown.]

Mr. HEDRICK. This is running on MTV.

Than you very much, Mr. Chairman. That concludes my testimony.

[The prepared statement of Mr. Hedrick follows:]

PREPARED STATEMENT OF THOMAS A. HEDRICK, JR., VICE CHAIRMAN, PARTNERSHIP FOR A DRUG-FREE AMERICA

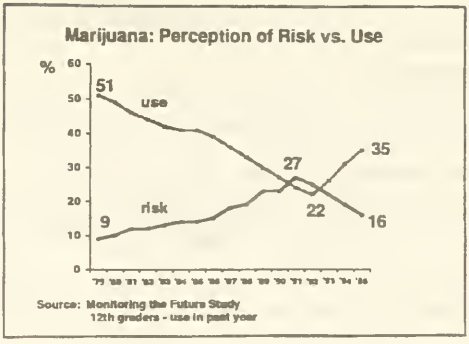
I am pleased to be here this morning, Mr. Chairman and members of the House Committee on the Judiciary's Subcommittee on Crime.

I have dedicated the past ten years of my life to using media communication to help prevent marijuana and other drug use by our youth. And, I believe there is no more important task for this nation. The fact that millions of our children are now using marijuana is a tragedy that all of us should work harder to help change. Not just because marijuana use has serious consequences for the lives of these kids and their families, but also because it can lead to other drug use and is correlated with higher levels of violence and other health and emotional problems. Our clear, consistent and unambiguous message to our children must be "MARIJUANA IS NOT A HARMLESS DRUG."

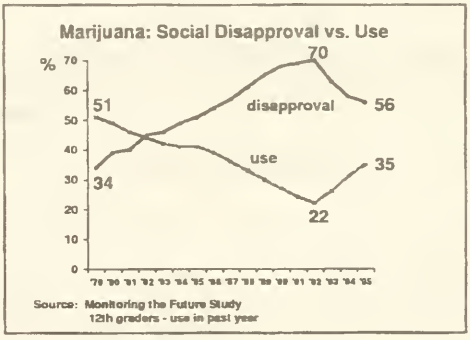
Prior to the recent reversal, the nation had made extraordinary progress in reducing marijuana use among our youth. From the late 1970's through the early 1990's, the percentage of our kids who have tried marijuana declined by more than 50%. That progress is proof that we as a society are not powerless against the drug problem. The evidence is clear --- Drug Abuse is a Preventable Behavior.

Preventing marijuana and other drug use by young people, and all who influence them, must be the first principle of national, state and local strategies: We must recognize that drug use is a process --- a process that begins with one child at a time making a decision whether or not to use marijuana. These decisions are occurring millions of times every day, in every city and town across America.

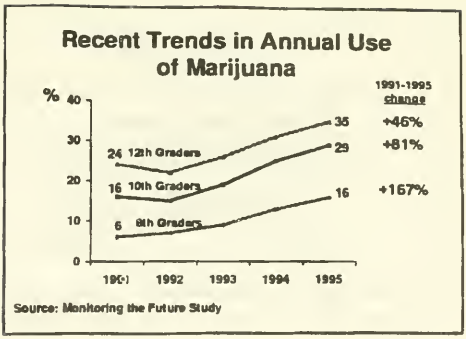
We know how to effectively and successfully communicate with kids to positively affect their decisions about drug use. When we as a society can persuade our kids that marijuana use is harmful and socially unacceptable --- that no use is the expected behavior --- then marijuana and other drug use goes down.



As you can see from this chart, all of us who influence children have recently been less successful in educating our children about the harmfulness of marijuana. Of all the factors effecting marijuana and other drug use by our youth, the most important are attitudes --- the way they perceive the drug and its use. The perception of harmfulness of using marijuana tripled from 1979 through 1991. The recent reversal in that attitude has been one of the two key factors in driving the recent increases in marijuana use.



The other key determining attitude for marijuana and other drug use is the perception of social disapproval -- a measure of the perceived social norm. After doubling since 1979, the recent erosion in this key attitude has been the reason why marijuana use has increased.

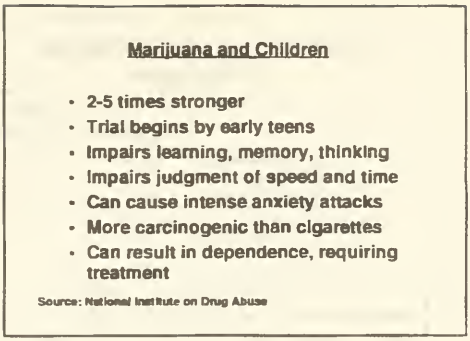


The most severe and frightening attitude and usage changes are among 8th graders -- kids who are 13 and 14 years old. This means that in an average 8th grade class of 25, 4 of those children have tried marijuana in the past year. The good piece of news on this chart is that the rate of increase appears to be slowing down; this may be a sign that marijuana use is beginning to reach its peak.

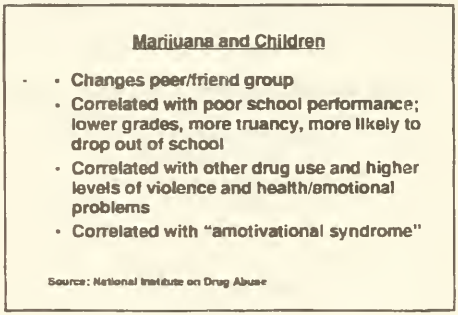
Why are anti-drug attitudes weakening?

1. Less anti-drug information
   - declining media attention
   - breakdown of families
   - baby-boomer parents conflicted
   - insufficient in-school education
2. More pro-drug information
   - legalization discussion
   - re-glamorization

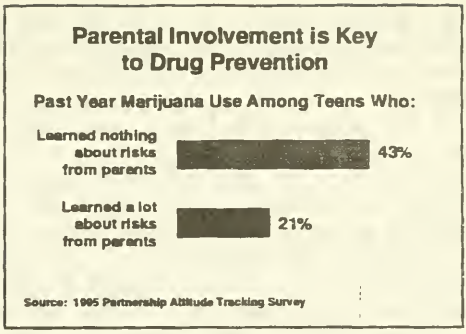
I believe we know with certainty, Mr. Chairman, that the recent increase in marijuana and the other drug use is due to our children's view that drug use is less harmful and more socially acceptable. We believe that this is due to a change in the balance in the information about marijuana that we adults are sending, and our children are receiving --- from many different sources. The result is fewer overall anti-drug messages and more pro-drug messages.


Marijuana and Children
• 2-5 times stronger
• Trial begins by early teens
• Impairs learning, memory, thinking
• Impairs judgment of speed and time
• Can cause intense anxiety attacks
• More carcinogenic than cigarettes
• Can result in dependence, requiring treatment
Source: National Institute on Drug Abuse

Last summer in Washington, the National Institute on Drug Abuse held a 3-day conference that covered recent, scientific evidence that, taken together, shows that marijuana use by children --- in and of itself --- has serious implications for their physical, mental and psychosocial development.


Marijuana and Children
• Changes peer/friend group
• Correlated with poor school performance; lower grades, more truancy, more likely to drop out of school
• Correlated with other drug use and higher levels of violence and health/emotional problems
• Correlated with "amotivational syndrome"
Source: National Institute on Drug Abuse

This new research also showed that using marijuana is a real risk factor that can have broad and serious implications for the lives of our children and their families. More research like this is urgently needed to reinforce the message that "Marijuana Is Not a Harmless Drug." When we can convince our youth, in intelligent and credible ways, that marijuana is a harmful drug and socially unacceptable, then we will be successful in reversing the recent and disturbing trends.


Parental Involvement is Key to Drug Prevention
Past Year Marijuana Use Among Teens Who:
Learned nothing about risks from parents
43%
Learned a lot about risks from parents
21%
Source: 1995 Partnership Attitude Tracking Survey

New research from our annual attitude Tracking Survey that was released February 20th shows that effective prevention must start with parents. Teens who have learned of the risks of marijuana from their parents are HALF AS LIKELY to use as those who haven't learned from their parents. The National Institute on Drug Abuse has developed new materials about marijuana for parents and their young teenagers to help reinforce this critical part of anti-drug education. Dr. Alan Leshner, director of the National Institute on Drug Abuse, will send to this subcommittee examples of those materials along with a summary of NIDA's marijuana conference last year.

I will close my testimony by showing some examples of what we at the Partnership, along with advertising agencies and the media across America are doing to help educate kids and their parents that marijuana use is harmful and socially unacceptable. I believe that our work is necessary, but I also understand that our work alone is not sufficient. We will also work with, and support, General McCaffrey's efforts. But America needs more federal prevention resources that cost-effectively catalyze prevention programs at the community level --- particularly by parents and through comprehensive in-school education. Most importantly, America's youth needs your leadership to clearly set reducing drug use as a key priority for us all.

SHOW VHS TAPE OF ANTI-DRUG

MESSAGES

Mr. MCCOLLUM. Thank you very much, Mr. Hedrick.

Mr. Conyers, I believe, has to go to a meeting and had asked if he could ask the first questions, and using the chairman's prerogative, I will yield to the distinguished ranking minority member of the full committee.

Mr. CONYERS. Mr. Chairman, I'm in your debt and I thank you for the courtesy.

I wanted to commend Ms. Haynes, and I would suggest to you that you and your organization meet with Mr. Hedrick, because those ads [referring to videotape], if you think that having a teenager say that she's not trusted after she admitted smoking pot, after her mother asked her, is a way to get people to tell the truth and be confident that their parents will back you up, I can disagree as a parent on that. And I think these creative advertising folks are swell, but let's get real.

What you did, Ms. Haynes, was name the cultural people. You know, I'm interested in everybody telling us about what parents have to do, and of what cops can't do. The problem is far bigger than that. When you've got movie stars, football players, basketball players overdosing and smoking pot and writing biographies, telling about it in the movies every night, implying that the use of this drug and perhaps others is OK, and then think that parents are going to do something, you're kidding yourself.

Now I like going after the cultural part of this thing. And we've got General McCaffrey today being sworn in today as the new drug czar. The President has said he's going to augment the staff and that was part of Dr. Lee Brown's problem, and I know about that problem because they took so long to nominate him and get him confirmed that everybody had raided the staff; as they were cutting back, they cut back on the person who wasn't in the job yet. And so he had a handful of people.

Now, Dr. Voth, let's be friends and let's be honest. Now you're the only doctor here. The biggest issue of all is whether or not this stuff has any medically-redeeming effects, and you give a whole statement and cite cases and cite evidence, but you don't give us anything from Dr. Voth and that's very disturbing, sir, because that is the problem, is that people aren't, the kids aren't convinced that marijuana is medically unhealthy to use. That is the big issue. We should have—and I'm sure the chairman is well-versed at how to do this and is going to do it—but we've got to go into very specifically about the medical activity.

Now for NORML, I want to meet with everybody in the State of Michigan that's in the NORML organization. In good faith, I've met with them before, but I'll meet with them some more because we've got to get to the bottom of this. Barbara Erinwright, a dear friend of mine, is on that board, so what I'm saying to you, sir, Doctor, is that we've got to prove the case. The kids aren't going to listen to those little junkie commercials and say, "Oh, well, now I'm not going to smoke pot. I was going to do it before but I saw all of this great, creative advertising nonsense and so I won't do it."

They're going to stop when the movie stars, the singers, and the people who they put your hard-earned money to buy tickets, when we get them to turn around, then it's going to be serious. And that's when we'll get a really serious handle on this. Let's not kid

ourselves, as I conclude, Mr. Chairman. Parents can't stop kids from smoking pot anymore than they can stop them from opening up a can of beer, but we've got to bring logic and we've got to persuade the kids on the basis of medical evidence.

And I'd like you to respond, if you could.

Dr. VOTH. The medical evidence is very solid.

Mr. CONYERS. I know it is, but you didn't bring any.

Dr. VOTH. I presented 50 pages of testimony to the chairman and I believe——

Mr. MCCOLLUM. There are pages of testimony and attachments.

Dr. VOTH. There are six different attachments with extensive bibliographies and discussion.

Mr. CONYERS. Well, we only got a few pages of it. I apologize if there is more than has been presented.

Dr. VOTH. I spent 10 years as the medical director of a treatment unit and in that time treated about 4,000 addicts, of which probably 25 percent were marijuana addicts, solely marijuana addicts. Clearly, it's an addictive drug. We went through the entire gamut of respiratory problems, immune problems, et cetera.

Mr. CONYERS. Dr. Voth, let me just close with this observation. Don't you share the view, or maybe you don't, that there is a legitimate medical use for marijuana?

Dr. VOTH. Not at all.

Mr. CONYERS. OK. Stop. I just want you to know that's where you and I part company. I do not argue with the medical authorities that claim that there could be some legitimate use for marijuana, especially if it's prescribed by a doctor. I am not here to tell doctors what they can't prescribe. But a kid can't pull out a joint and say it's medically OK, or you shouldn't be able to say that it has no medically-redeeming values, when it seems to me that the literature suggests otherwise. But I'm going to be studying it, you've already studied it, and the chairman will be holding more hearings. And I thank you very much.

Mr. MCCOLLUM. Thank you, Mr. Conyers.

I'd like to turn first to Mr. Hedrick and yield myself 5 minutes at this point. Your chart you showed us a minute ago showed a remarkable increase in the use of marijuana among young people in this country starting with, I presume, a measurement that ran from mid-1992 to mid-1993. All of the charts just go up and everything else had been going down, everything sort of ends there, bottoms out, and "phoom," right on up. Do you have anything that you could give us in the way of something to hang our hat on as to why this sudden change of course, very dramatic at that particular time, at the end 1992 to the beginning of 1993?

Mr. HEDRICK. No firm proof, but a consensus of opinion among the people who study this, and it really started in 1991 to 1992, particularly among eighth graders. Everything reached its peak in terms of success in 1991 and 1992 and then it really began to erode in 1992 to 1993. And from our opinion, if you look at the news coverage and the way this issue's been talked about, right after the Gulf War is when drugs fell off the national radar. The administration, Congress, the media, all of us, unfortunately, took our eye off the ball and I think that's clear evidence, when we as a Nation,

particularly we who influence children, take our eye off the ball, we're going to pay the price.

Mr. MCCOLLUM. So, until Mr. McCaffrey was appointed in the past month or so there had been a hiatus of a number of years during which there had been no real emphasis in leadership nationally against the use of marijuana and drugs in particular. That's my observation and I gather that's what your observation is.

Mr. HEDRICK. Yes, I think we're all to blame. I think in terms of leadership, I think we in the media believed that it was a tired, old story. We stopped reporting on it. We have been less successful in getting our spots starting in 1991 and 1992 because the media——

Mr. MCCOLLUM. Is that a general consensus? I don't want to get into a protracted discussion. Ms. Haynes.

Ms. HAYNES. Yes, I'd like to speak to that. I agree with Mr. Hedrick about us taking our eye of the ball, but I think it's important for you to know that between 1991 and 1992 is when the media strategies and marketing campaign really kicked in of the pro-drug lobby. We have materials and videos that we would be glad to share with you about how they put together their media strategy, and it's quite sophisticated. And so Mr. Hedrick's charts did not surprise me because it's when this campaign really began to begin.

Mr. MCCOLLUM. That's the type of thing I was looking for in the answer to that question. Thank you very much.

Looking at the charts also that you had, Mr. Hedrick, it seems very clear that whatever NORML or others are arguing about the effects of marijuana on adults or other people, and that's something Dr. Voth does have in the testimony he rebuts, and there's quite a bit of scientific evidence, that marijuana use among children is influenced in a way that's different. There is a two-and-one-half times stronger effect, I gather you've got, that it impairs learning, memory, thinking, et cetera, so it really affects children excessively. So I wonder if it isn't a problem, even if you gave them the benefit of the doubt. which I don't do, on all the other facets of marijuana, that simply by being tolerant of it, you're going to increase the use of it by youth, and, therefore, have all of the side effects that you've shown us among our young people.

I don't know how you can tell them not to use it and then let the rest of the population use it. That's what I'm groping with a little bit. Can you elaborate on that point?

Mr. HEDRICK. I think that's absolutely correct. I think that, as Stephanie said, those of us who are trying to communicate the fact that this is a harmful substance stopped talking, didn't talk often enough or loud enough, and we gave our voice to some of the people who are behind us. And I think we paid the price for that. Kids aren't stupid. And we've done over 160 focus groups around the Nation in the last 12 months alone, and kids clearly tell us that if adults are considering that we should legalize pot, that it's obviously no big deal, and it has had an impact on their attitudes. And I think that's morally indefensible and unconscionable.

Mr. MCCOLLUM. And it does have more impact on young people than on adults, the use of it. It affects them more dramatically, physically and so forth?

Mr. HEDRICK. Absolutely, yes.

Mr. MCCOLLUM. Dr. Voth, in the little bit of time I have before we're going to have to take a break and go vote, I wondered if you could put on the record for us some responses, just very short ones, verbally, with what has been put out by NORML and the study you referred to, and others, that was done, founded I think by Mr. Soros, that says, the survey shows that the large majority of people who have experience with marijuana do not become regular users, that "there's scant evidence that marijuana produces physical dependence and withdrawal in humans." And on the question of other users of it as a gateway drug, their statement is that it's true "most users of heroin, LSD, and cocaine have used marijuana, but most marijuana users never use another illegal drug."

And, last, I'd certainly like to get your response to the witness, Mr. Brookhiser, and his concern about nausea; he's got a very poignant statement he has to make later saying that in the cancer treatment it was helpful to him and he didn't find any other medicinal product that stopped the nausea. So if you could comment very briefly, I'd appreciate it.

Dr. VOTH. I'll briefly address the medical issue. There is no doubt that THC has some medical benefit. And that's the major medical active ingredient in marijuana. We have to keep in mind that, as physicians, I would not prescribe a smoked substance, an impure substance, and one that has unpredictable pharmacology to a patient. I would provide them with medicine. The oral medicine is available, THC is available as marinol. It can be reformulated as a nasal spray or a suppository, or whatever. This issue has been blown tremendously out of proportion. It's virtually completely fueled by NORML. The AMA has rejected the idea of smoked marijuana even though they support the idea of pursuing the idea of THC applications, because they, again, do not see the utility of smoking a drug.

Mr. MCCOLLUM. But Mr. Brookhiser says, though, that he has tried the other and it's not as effective as smoking. I mean that's the gist of his testimony as I read it. He's going to get to say it here in a few minutes. I'm not sure if I'm saying it right or not.

Dr. VOTH. Well, there again, it's an issue of, Was that oral form the correct form? Could it have been used as a nasal spray? I've debated this all over the country with people that claim those things, and then when I have actually dug into the medical backgrounds, it's not accurate. They haven't had zofran; they haven't other antinausea agents. So I can't say. I will say that smoked THC does help nausea and does help the AIDS-wasting syndrome. But when you on par gauge the other potential side effects—respiratory side effects, contaminants such as bacteria and fungi, et cetera—it's risky, plus it's not a medicine, and that's what I want to provide patients.

Mr. MCCOLLUM. I'm going to interrupt you because we are going to have to vote. When we come back, I'd like for you to continue to answer the question with regard to the issue of the gateway use, and then I'm going to turn to Mr. Scott for his questions. But I will let you finish the answer. We've got to get over to vote and we'll be back as soon as this vote is over.

[Recess.]

Mr. MCCOLLUM. I don't see a lot of other members back right now, but since Dr. Voth was in the midst of answering some questions with respect to the medical and scientific analysis of some of the critics of the marijuana policies that we've adopted over the last few years, I thought I'd let you continue. If you recall, what I had asked about was not only the medicinal use question, which I think you pretty well finished with, maybe not, but you're welcome if you haven't to elaborate on it, but also the comments made by an outfit that was attached as an addendum to the submitted testimony of NORML today that is called, if I get it right here, the Open Society Institute, and it was a study done by the Lindesmith Center.

And they say in here, among other things, that "most users of heroin, LSD, and cocaine have used marijuana. However, most marijuana users never use another illegal drug" as a justification for saying the gateway is not real, and they also say that surveys show a large majority of people who have had experience with marijuana did not become regular users and that "there is only scant evidence that marijuana produces physical dependence and withdrawal," among other things, with regard to its addictive properties or nonaddictive properties. Could you respond to those? I know you have quite a record in submission, but orally today there's really been nothing on the record.

Dr. VOTH. Very briefly on the medical issue, I would clarify that there is undoubtedly some perceived benefit to smoking marijuana, but my major concern is that I want people to receive pure medication when they're having a problem and to be sure they're not having the other potential side effects such as bacterial fungal overgrowths, et cetera, have a standardized medicine, et cetera.

I participated in a survey of oncologists that demonstrated that only about 4 percent of oncologists that were surveyed would have used prescribed smokeable marijuana greater than 10 times a year as compared to several hundred doses a year of other types of nausea agents. And it's generally a last choice of oncologists.

Moving on to the addiction and gateway issue, first of all, the gateway studies are very thorough. If you look through this analysis, and this is the first I've had a chance to see it, most of these are ancient studies, ancient history, seventies, very early eighties. The gateway studies done by Kandel and her coworkers, from the seventies clear on up to current day, have clearly demonstrated that the earlier a person is exposed to any drug of abuse, the greater the likelihood for continued addiction, and that alcohol, marijuana, and tobacco are the typical gateways in that progression to other drugs of abuse.

One study that I had done which was of addicts but not published, demonstrated that about 80 percent of the cocaine and amphetamine addicts that we treated had started typically at about age 11 to 12 with marijuana or alcohol. As far as addiction, there is a well-spelled-out addictive syndrome. I've provided a bibliography to that effect. It's very well described by Dr. Mark Gold and commented on in the American Journal of Psychiatry in a position paper on cannabis dependence. One of the interesting findings of marijuana addiction is that the marijuana addict themselves frequently do not recognize their addiction. We call that denial in the

treatment world, and for some reason denial in the marijuana addict is extremely thick.

Employers will comment that their work is falling off; family members will comment that they're having more problems, that they're getting into legal problems, wrecks, et cetera. Yet, the addict himself does not seem to recognize it as well as the cocaine addict or alcoholic does. Treatment is very similar, but there is one major difference. It lasts so long in the system that it may very well take weeks or months before the mental functioning, the memory, the cognitive abilities, clears back to a place where the addict is more functional. So, it is a different drug in that regard. And that may be why a dramatic withdrawal syndrome does not take place with it.

Mr. MCCOLLUM. I know I'm going to recognize Mr. Coble, but with no one else here, I want to take a little liberty with you and ask you, if you would, tell us how you respond to the critics who say there is no real difference between marijuana and alcohol and that we should be thinking about legalizing marijuana for the same reason we recognize and legalize alcohol.

Dr. VOTH. Well, first of all, I'd comment that alcohol clearly has a difference between beverage consumption and intoxication, or consumption with the intent to intoxicate. I don't support individuals going out actively intending to intoxicate themselves with alcohol. It's a high-risk function. There's a whole host of medical side effects that are well known with that. But as a beverage, a scotch-and-soda-type thing, it is a socially-acceptable, low-risk type of entity. People don't smoke pot because they like the smell of the smoke. They smoke it to become intoxicated. The intent to use is intoxication, which takes it to a whole different risk type of pattern.

The other reality is that alcohol has been integrated into our social fabric for years and years and years and years. When we had prohibition, the hospitalizations and deaths from cirrhosis and alcohol-related problems were at an all-time low and the admissions to mental institutions for alcohol-related problems were at an all time low. I'm not a prohibitionist. I think it's unrealistic to try to prohibit alcohol use now. But there's a clear message. If you look at alcohol use in adolescents, it is dramatically higher than marijuana use in adolescents; yet, alcohol and marijuana are both illegal for adolescents. Alcohol is legal for adults; marijuana is illegal for adults.

Mr. MCCOLLUM. Because I started with Mr. Conyers, I'm going to pop over and let Mr. Coble go right now, Mr. Scott, and I'll be right back to you.

Mr. Coble, you're recognized for 5 minutes.

Mr. COBLE. Thank you, Mr. Chairman. Mr. Chairman, when you said to the panel that many people equate marijuana to alcohol consumption—we even had a Surgeon General who wanted us to consider legalizing illegal drugs, while at the same time banning tobacco. Of course, I come from tobacco road, so that flies right into my teeth. But I find that interesting as well, Mr. Chairman.

Folks, I appreciate you all being here.

Mr. Hedrick, when you said the words "when we pay attention," and those words are so vital, when we pay attention and keep our

eyes on the ball, oftentimes that can avoid chaos and disaster, and oftentimes we don't do that.

I want to take issue with my friend from Michigan, the gentleman from Michigan, when he said, and I think I'm paraphrasing when he was directing his comments to you, when he said that parents don't have any say so over this; parents can't keep it from happening any more than they can keep a kid from popping a can of beer. Well, my gosh, I think parents clearly can keep it from happening.

Dr. VOTH. Sir, I totally agree with you and the research bears out what you and I are saying here. Clearly, parental involvement, parental bonding to the child, involvement with the child in their formative years and in their adolescent years is one of the disincentives to drug use of any kind and is clearly seen as one of the low-risk items, and lack of parental involvement is clearly defined in the research as one of the high-risk items.

Mr. COBLE. Well, I'm glad to hear you corroborate my view because I think the gentleman from Michigan missed the mark on that conclusion. Mr. Heineman, in his opening comments, indicated the importance of family involvement. I can see where, if parents are involved, well, let's assume for the moment that some of these rap records or records indicating how cool drugs are—boycott the record store. Don't let your kids go down there and buy a record. That's one good way of getting their attention. So I could see how parents could have a very vital role in combating the use of marijuana and other drugs.

Mr. Hayes, I have delivered several graduation speeches at DARE exercises, as I'm sure my colleagues have as well. Refresh my memory. I'm sure that most DARE programs are sponsored by the police departments or the individual sheriff's departments, whoever assumes the role. Who funds the training for the DARE office? Does that come from Federal funds?

Mr. HAYES Yes, that comes from Federal grants given to the States and the States have the individual training centers.

Mr. COBLE. Then once the Federal moneys are expended to take care of the training of the DARE officers, then the administration and the day-to-day upkeep of the DARE program, that's done by State and local funds?

Mr. HAYES It's done by the local funds.

Mr. COBLE. The local funds exclusively?

Mr. HAYES. Right.

Mr. COBLE. Any State moneys at all involved?

Mr. HAYES No. Just the training and the workbooks.

Mr. COBLE. I think some recent months ago, Mr. Chairman, there was some adverse publicity about DARE. I don't recall specifically what it was, but I think on balance you all with the DARE program do a good job. Do you recall what that bad publicity was, Mr. Hayes?

Mr. HAYES Basically, they were saying that we were training young people to become snitchers and that we were trying to get them to turn their parents in if they were using drugs.

Mr. COBLE. I don't buy off on that based upon my dealings with the DARE program. I find you all do a real good job.

I just wanted to ramble a while, no specific question, except I did want to allude to what Mr. Conyers said because I think he missed the mark on that one, Doctor, and I appreciate your weighing in on it.

Thanks to you all for being with us folks.

Mr. MCCOLLUM. Thank you, Mr. Coble.

Mr. Scott, you're recognized for 5 minutes.

Mr. SCOTT. Could I pass so that I can catch my breath?

Mr. MCCOLLUM. Sure, absolutely.

Mr. Barr, you're recognized for 5 minutes.

Mr. BARR. Thank you, Mr. Chairman.

I'd just like to say that I've reviewed the materials and listened to a portion of the testimony this morning. I was necessarily absent for part of it, but I have reviewed the material. I know the programs we're talking about here. I'm very familiar, as a former Federal prosecutor, certainly with the DARE program and know that it does provide a very, very substantial amount of assistance to the overall antidrug effort and would just like to ask this panel, if there's anybody on this panel who believes that people smoke marijuana for some reason other than altering their mind. I mean, it is a mind-altering drug, is it not?

Dr. VOTH. Absolutely.

Mr. BARR. Yes, I kind of suspected so. Thank you.

And thank you, Mr. Chairman, again for bringing together this panel.

Mr. MCCOLLUM. Thank you, Mr. Barr.

Mr. Scott, you're recognized for 5 minutes.

Mr. SCOTT. Thank you, Mr. Chairman.

I think that everybody can agree that our goal is trying to reduce use of marijuana and the question is how we can do this most effectively. Mr. Hedrick, I noticed that in your testimony and in most of the other testimony that message, counseling, and that kind of thing was the most effective tool that we could use to reduce marijuana use. I didn't hear a lot about increasing sentences to be served for marijuana use. Since we have a limited amount of money, what do you think are the most cost-effective ways of reducing drug use, particularly marijuana?

Mr. HEDRICK. I think a balanced strategy, sir, is still the best way for this Nation to invest its money from supply side and demand side. I think the overbalance to supply side at the moment probably is incorrect based on the lack of proof that they're more successful than demand side. But I think that it's neither prevention nor treatment, supply versus demand; it's all together, working together, I think. We work with a lot of DARE officers who know that these things go hand-in-hand. Law enforcement is a very effective demand-reduction tool.

We know from our own attitudinal studies that fear is an essential part of prevention. We know that fear of getting in trouble with the law is one of most important components of the perceived risk of using marijuana and other drugs, and the fact that that fear has some teeth in it is one of the critical factors; we can get back to increasing perceived risk.

Mr. SCOTT. "Teeth" meaning chance of getting caught and not the length of the sentence?

Mr. HEDRICK. I don't have information to know that there's a differentiation between those two, so I can't answer that question.

Mr. SCOTT. Well, I've seen virtually no evidence that length of the sentence makes any difference at all. However, chance of getting caught does make a difference.

Mr. HEDRICK. Well, I do know that if you take that a step further, and we know that the judicial system is the most important way that people in trouble with drugs get into treatment, that the longer that person is in treatment, the more likely they are to have a successful outcome.

Mr. SCOTT. I think there is plenty of evidence to show that treatment produces a better outcome for drug users than jail, anyway. The evidence we saw in drug court was remarkable. The recidivism rate is much lower. The cost is much lower. Based on the evidence we've seen, it's almost imbecilic to send someone to jail for simple possession.

Mr. HEDRICK. Unless they're getting treatment in jail, which shows a very high success rate in reducing recidivism, whether it's in drug court or whether it's in prison treatment.

Mr. SCOTT. And does being in jail getting the treatment add to the reduction in recidivism?

Mr. HEDRICK. Yes.

Mr. SCOTT. Do you have any studies to show that?

Mr. HEDRICK. Yes, both from Dade County and in Texas and in New York.

Mr. SCOTT. If you could present that evidence to us that shows it's cost-effective to put somebody in jail for drug use, I'd like to see it, because all of the evidence we've seen shows, it's much more cost-effective to have treatment rather than jail.

Dr. Voth.

Dr. VOTH. This is actually not widely being done now, but one of the things that I've supported is the idea that, upon admission to the criminal justice system, there be a clear determination whether an individual appears to really be someone who has committed a crime but fundamentally is a drug addict, versus someone who is fundamentally a criminal, and that they're tracked during the entire criminal justice stay, is focused on drug rehabilitation. The huge mistake we make now is they'll spend 5 years in prison, go to 30 days of treatment at the end, and then go out.

Now that may be effective, but if you had 5 years under that type of a sentence, where they are continually going through a rehabilitative treatment process, and you have them drug screened and you have a captive audience, then that's when you create change. And the captive audience has been one of the most difficult things in creating change in a treatment environment.

Mr. SCOTT. And we've heard from the Director of Prisons that the length of the sentence has virtually no—is very low on the scale of things that reduce recidivism. Job training, education, and I assume drug rehabilitation would be the things that would reduce rehabilitation, not just how long you warehouse someone.

Dr. VOTH. That is correct, and my argument would be that that time should be spent in an action rather than just sitting. I would say, though, that the moves to drop the sentencing cliff, so to speak, from 1,000 grams to 100 grams, is phenomenally the wrong

direction. In fact, I think the studies on this that were conducted by DEA at the Federal Marijuana Project suggest that the average weight of plants is more like 240 or 220 grams. So I think that move, especially in people busted with larger and larger amounts of plants, is probably a move in the wrong direction on the part of the Sentencing Commission.

Mr. SCOTT. If I could ask—I know my time has expired—if you could provide the studies that show the pathological findings of the harm of marijuana. And I think you said, Dr. Voth, that 75 percent of murders are somehow marijuana-related, if we can get those findings. My time has expired.

Dr. VOTH. In the packet that I provided, I provided the bibliography as to the physical and scientific data which should be included, and I'll make an effort to get you a copy of the criminal article.

[The information follows:]

Mark L. Williams received his Ph D. degree in 1983 from the University of Iowa. He has conducted research on HIV transmission among injection drug users and on drug user treatment, retention, and outcome. He is now Vice President of Research and Development of Affiliated Systems Corporation in Houston, Texas. He served as principal investigator of the NADR project in Houston.

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The Role of Marijuana in Homicide

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ABSTRACT

In this paper we examine the relationship between marijuana use and homicide. Data derive from interviews with 268 individuals incarcerated in New York State correctional facilities for homicides that occurred in 1984. We found that in terms of lifetime use, marijuana was the most commonly used illicit drug in this sample; that about one-third of respondents who had ever used marijuana used the drug in the 24-hour period before the homicide; and that almost three-quarters of those respondents were experiencing some type of effect from the drug when the homicide occurred. A total of 18 respondents (7% of the total sample) said that the homicide was related to their marijuana use. We examine the reasons these respondents gave for this relationship and the other substances they reported using at the time of the homicide. We also demonstrate that from the perspective of a conceptual framework that specifies the ways that drugs and violence may be linked, there are various nuances in the ways that marijuana and homicide are related. We discuss the implications and limitations of using self-report data from perpetrators of violence for our understanding of the drugs–violence connection.

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INTRODUCTION

The belief that marijuana is causally linked to violence and aggression first assumed prominence during the 1930s when lurid accounts of marijuana "atrocities" were published in newspapers all over the country. These largely unsubstantiated stories gave rise to the stereotype of the marijuana user as physically aggressive, criminally inclined, and dangerous. However, no substantial evidence existed of a causal connection between the use of marijuana and the commission of violent or aggressive acts (Kaplan, 1970; Grinspoon, 1971; National Commission on Marijuana and Drug Abuse, 1972).

Since the 1930s a considerable body of research has accumulated concerning the possible link between marijuana and violence. Reviews of this literature have concluded that use of marijuana is not a major cause of violence or aggression. There is little evidence that sporadic or chronic marijuana use results in an increased likelihood that an individual will engage in violent or aggressive behavior. Because it produces a relaxing effect on users, marijuana is usually considered as a suppressor of hostility and aggression (Abel, 1977; Jones, 1980; Cherek and Steinberg, 1987; Fagan, 1990).

Nonetheless, researchers suggest that marijuana has the potential to disrupt interpersonal behavior and to facilitate aggression. When taken by certain individuals in certain social conditions, cannabis may increase irritability and result in violence (Abel, 1977). Case reports describe explosive, agitated, and violent behavior in some individuals (Jones, 1980). And violence by people under the influence of marijuana has been documented in studies involving male and female heroin and cocaine abusers from New York City (Spunt et al., 1990a, 1990b), adolescent male and female Mexican Americans (Watts and Wright, 1990), juveniles incarcerated in detention centers in Florida (Dembo et al, 1987a, 1987b; 1992), and marijuana dealers and smugglers in California (Adler, 1985).

The published literature reveals no study in which persons arrested or incarcerated for a violent crime have been asked detailed questions about their use of marijuana at the time of the crime and their beliefs as to the connection between their marijuana use and the crime. This is the type of data that would provide an important contribution to our understanding of the ways, if any, marijuana and violence are actually linked.

Another area that has not been investigated is the relationship to violence of marijuana in combination with other drugs. Despite the recognition that marijuana is commonly used in combination with alcohol and other drugs, and that drug combinations can have more profound behavioral effects than the use of any one drug alone (Cohen, 1979; Jones, 1980; Simonds and Kashani, 1980), there have not been studies of the link between these combinations and violence.

In 1989 and 1990, interviews were conducted with 268 individuals incarcerated in New York State Correctional facilities for homicide (murder and nonnegligent manslaughter). The main purpose of these interviews was to obtain the offenders' own accounts as to the drug-relatedness of the homicides they were sentenced for having committed. One goal of this research was to examine the relationship between a variety of specific substances and homicide. In this paper we focus on the marijuana–homicide connection. Specifically, we address the following questions:

1. What was the extent of lifetime use in this sample of homicide offenders?
2. To what extent did respondents believe that their marijuana use was related to the homicides that were committed? What reasons did respondents give to explain this relationship?
3. What other drugs were used by respondents who believed that the homicides they committed were related to marijuana? To what extent were their homicides linked to these marijuana–other drug combinations? What were the reasons given for this linkage?
4. Viewed from the perspective of a conceptual framework that specifies the variety of ways that drugs and violence can be related: what were the ways that the homicides were related to marijuana?

SAMPLE AND METHODS

Self-report data derive from the Drug Relationships in Murder (DREIM) project (Goldstein et al., 1992b). The 268 individuals interviewed on the project were incarcerated for homicides committed in New York State in 1984. The focus was on homicides committed in 1984 because one objective of the project was to compare self-report data with data about these homicides that had previously been obtained from police records. In that study, all police departments in New York State that reported at least one homicide in 1984 retrospectively examined their case files and recorded drug-related information about each homicide on a research protocol developed for the project (Goldstein et al., 1992a).

To be included in the inmate sample, the individual must have been identified in the police study and subsequently arrested, charged, convicted, and incarcerated in a New York State correctional facility. The sample was specified through a detailed matching of the perpetrator file constructed for the police study with files maintained by the State Division of Criminal Justice Services that indicated the identities of all individuals who had actually been arrested and charged for a homicide in the state in 1984 (not all individuals identified in the police study were officially charged, while in other cases there was a victim but no known suspect).

The final stage of the sample selection process was to determine which of the individuals found to be on both lists ($N = 695$) were incarcerated in a New

York State correctional facility so that they could be contacted for an interview. By logging directly onto the New York State Department of Correctional Services' computer system, we found that a total of 430 of these individuals were incarcerated in state prisons. These 430 individuals comprised the original inmate sample. The goal was to contact and interview as many of these individuals as possible.

Three hundred sixty-seven of the 430 individuals in the sample (85%) were eventually contacted for interviews at 37 separate state correctional facilities. During the informed consent discussion, interviewers explained that the purpose of the study was to help us gain a better understanding of the relationship between drugs and violent criminal behavior. Since state corrections policy is that payments to inmates are not allowed, a "thank you" letter that would become part of the respondent's institutional file (and thereby available to parole officials) was offered to potential interviewees as an incentive to participate in the research.

Of the 367 individuals who were contacted for interviews, 268 (73%) agreed to be interviewed (one respondent was incarcerated for, and interviewed about, two separate homicide events that occurred in 1984), and 99 individuals (27%) refused to interview. Interviews were conducted in a variety of settings including classrooms, visitors areas, lawyer and parole officer meeting rooms, prison hospital wards, areas adjacent to the cellblocks, as well as in rooms in "special housing" (solitary confinement) blocks.

A total of 63 individuals (15% of the sample) could not be contacted for an interview. Most had been released to parole supervision before the project began. Others could not be contacted because they were housed in restricted areas at prisons that do not allow outside researchers to contact inmates who are confined to such areas; they died prior to our being able to contact them; they were released to federal authorities; or they were "out to court" during the interviewing period.

The interview schedule was designed to generate quantitative and qualitative data but to be completed in a 1 to 2 hour session. One section focused on the 1984 homicide event for which the individual was incarcerated, and especially the drug-relatedness of that homicide. Another section focused on respondents' personal histories of drug use, drug treatment, drug trafficking, crime, and violence.

Table 1 shows the sociodemographic characteristics of the 268 individuals who were interviewed. The sample was 97% male. The small number of females was a consequence of the following factors: 1) the sample was limited to homicides that occurred during one particular year; 2) in New York State in 1984 only about 8% of all individuals arrested for homicide were female; and 3) females arrested for homicide in the state in that year were less likely than males arrested for homicide to have been incarcerated (New York State Divi-

Table 1.

Characteristics of the Interviewee Sample (N = 268)

	%	N
Sex:		
Male	97	259
Female	3	9
Race ethnicity:		
Black non-Hispanic	47	125
Hispanic	29	79
White non-Hispanic	24	63
Asian	—	1
Age:[a]		
Below 20	17	46
20-29	50	133
30-39	24	64
40+	9	25
Marital status:[a]		
Single	46	124
Married/common law	40	106
Divorced/widowed/separated	14	38
Number of years of school completed:[a]		
0-8	22	59
9-11	44	119
12 or GED	25	66
13+	8	21
Missing	1	3
Employment:[a]		
Mainly unskilled	42	112
Mainly skilled	38	102
Never had a legal job	19	52
Missing/unknown	1	2
Residence:		
New York City	66	177
Outside New York City	31	83
Missing	3	8

[a] At the time of the 1984 homicide event.

sion of Criminal Justice Services, 1990). Forty-seven percent of interviewees were Black (non-Hispanic), 24% were White (non-Hispanic), and 29% were Hispanic. One interviewee was Asian (Chinese).

At the time of the homicide, respondents ranged in age from 16 to 71 years (median age was 25 years). Forty-six percent were single, 40% were married (or living in a common law relationship), and 14% were divorced, widowed, or separated. Only 25% of respondents were high school graduates or had earned an equivalency degree (median number of years of school completed was 10).

Forty-two percent of respondents stated that before they were incarcerated for the homicide, they worked mainly at unskilled occupations (e.g., cab driver, factory worker, security guard), 38% worked mainly at skilled occupations (e.g., carpenter, printer), and 19% reported never having had a legal job before they were incarcerated. Table 1 also shows that 66% of interviewees resided in New York City at the time of their arrest for the homicide, while 31% resided in other parts of the state; in 3% of cases, residence upon arrest was missing.

FINDINGS

Lifetime Use of Marijuana

Table 2 presents data on lifetime use of marijuana and other drugs for the 268 inmate respondents. This table shows that marijuana was the most commonly used *illicit* drug in this sample of homicide offenders; 86% of the sample (N = 231) had used marijuana at some time in their lives, slightly less than the percentage of respondents who had ever used alcohol, a legal drug (96%). Marijuana was also the illicit substance first used by these offenders; median age of first use was age 15, just one year after first use of alcohol (at age 14).

Table 2.

Lifetime Use of Marijuana and Other Substances by the Sample (N = 268)

	Ever used		Median age of first use	Typical use was regular[a]		Ever addicted/ dependent	
	%	N		%[b]	N	%[b]	N
Marijuana[c]	86	231	15	42	97	16	36
Alcohol	96	256	14	31	80	20	5
Cocaine	68	181	19	28	50	27	49
Psychedelics	32	85	16	8	7	4	3
Heroin	30	79	19	37	29	51	40
PCP	21	56	17	12	7	7	4
Amphetamines	21	56	18	23	13	12	7
Tranquilizers	20	55	18	20	11	9	5
Other opiates	12	32	20	3	1	3	1
Barbiturates	12	31	18	26	8	13	4
Street methadone	11	30	21	7	2	7	2
Other drugs[d]	15	39	17	23	9	8	3

[a] Regular use is defined as 3 or more days per week.

[b] Percentages are based on number of respondents who ever used a specific substance.

[c] Includes hashish.

[d] Includes Quaaludes, placidyl, steroids.

Respondents were asked how often they would typically get high on substances they had used. Table 2 shows that marijuana was the substance (licit or illicit) most likely to have typically been used on a regular basis (defined as 3 or more days/week); 42% of respondents who had ever used marijuana typically used it regularly. (Fifty-seven percent of the regular users typically used it on a daily or near daily basis, i.e., 6–7 days/week.)

Respondents were also asked if they ever felt addicted to or dependent on the substances they used. Sixteen percent of marijuana users felt they had been addicted to or dependent on marijuana at some time in their lives—about the same percentage as users of alcohol (20%). Users of marijuana were less likely than either users of cocaine (27%) or users of heroin (51%) but more likely than users of all other substances to report they had been addicted or dependent on that substance at some time in their lives.

Relationship of Marijuana Use to the Homicide

Respondents were asked a series of questions about their use of various substances at the time of the homicide for which they were incarcerated. A total of 73 respondents (32% of those who had ever used marijuana and 27% of all respondents) said they had used marijuana in the 24-hour period prior to the homicide. Table 3 presents data on the marijuana-related effects these 73 respondents were experiencing at the time the homicide occurred. This was determined based on responses to the following questions asked of all individuals who had indicated they had used a particular substance (in this case marijuana) prior to the homicide: "Were you high on [marijuana] when the incident happened?"; "Were you coming down from [marijuana] when the incident happened?"; and "Were you sick or in need of any [marijuana] when the incident happened?"

Table 3.

Use of Marijuana at the Time of the Homicide and Relationship to Homicide

Used marijuana in 24 hours before homicide and at time of homicide were	%[a]	*N*	Number who said homicide and marijuana were related
High	62	45	14
Coming down	7	5	2
High and coming down	1	1	1
Coming down and sick/in need	1	1	1
Experiencing no effect	29	21	—
Total	100	73	18

[a] Percentages are based on number of respondents ($N = 73$) who used marijuana in the 24 hours before the homicide.

Table 3 shows that of the 73 respondents who used marijuana in the 24-hour period prior to the homicide, a total of 52 (71%) said they were experiencing some type of effect related to their marijuana use when the homicide occurred. Sixty-two percent said they were high on marijuana; 7% said they were coming down from marijuana; 1 respondent stated he was both high and coming down from marijuana when the homicide occurred; and 1 said he was both coming down and sick/in need of marijuana at the time. A total of 29% of respondents who had used marijuana in the prior 24 hours said they were neither high, coming down, or sick/in need of marijuana when the homicide happened.

Respondents who indicated they were experiencing some effect related to their marijuana use were asked if they thought that the homicide was in any way related to that status. Table 3 shows that 25% of the 73 individuals who had used marijuana the day of the event (N = 18) felt that the homicide was related to their marijuana-related psychopharmacological status at the time of the homicide. This group, which was comparable to the rest of the interviewee sample in terms of the sociodemographic characteristics presented in Table 1, includes 14 of the 45 respondents who said they were high on marijuana at the time of the homicide, 2 of the 5 who were coming down from marijuana, the respondent who said he was both high and coming down, and the respondent who said he was both coming down and sick/in need. Thus, of all 268 respondents, 7% said that marijuana was related to the homicide that brought them to prison.

The 18 respondents who thought the homicide they committed was related to marijuana were asked why they thought the homicide was related to their marijuana use. A variety of reasons were given. Four respondents gave responses which were coded as "it made me aggressive, violent." One of these respondents, who got into an argument with and stabbed a cocaine dealer who refused to "front" him some cocaine, stated that "when I'm high I just lose control . . . it was bad." Another of these respondents, a man who shot his wife after finding her in bed with another man, said "I don't think I would have done anything if I hadn't been under the influence. Probably I would have just smacked her."

Four responses were coded as "it lowered my inhibitions." In one of these cases, the respondent was involved in a robbery in which the owner of a pharmacy was killed. During the interview he stated, "if I wasn't high, I don't think I would have agreed to do it . . . I just felt—let's do it."

Two responses were coded as "it made feel paranoid." One of these was given by a respondent who got into a dispute with a man who urinated on his car; he believed that the marijuana "kept me from thinking clearly—it made me do what I did." Two responses were coded as "it made me feel nervous, anxious." One of these was the response given by a respondent who picked up a

hitchhiker and raped and killed her. He stated, "As I was walking with her into the woods she was scared and I recall somewhat of a thrill feeling. I can't explain it."

One respondent who killed a drug dealer who had ripped him off in a drug deal stated that the marijuana "made me think slow and act foolish. I think that if I hadn't been smoking the pot I would not have stabbed him so many times." Another respondent, who killed his former girlfriend's boyfriend by stabbing him 3 times, stated, "the pot slowed down my reactions, I might have only stabbed him once . . . if I hadn't been high."

Other Drugs Used by the "Marijuana-Related" Group

We noted above that researchers who have studied the marijuana–violence relationship have not investigated drug combinations involving marijuana in regard to their relationship to violence. This is a significant omission, since marijuana is commonly used in combination with other substances, and it is known that drug combinations can have profound behavioral effects.

All respondents who reported using more than one substance in the 24-hour period before the homicide were asked the following questions: "Do you think the homicide was in any way related to the fact that you took a combination or mixture or drugs, rather than a single drug?"; "What was the combination or mixture?" (up to three drugs were coded); and "What makes you think that?" Responses are shown in Table 4.

Table 4.

Other Drugs Used by the "Marijuana-Related" Group (N = 18) and Relationship to Homicide

Homicide related to marijuana and also high on	%[a]	*N*	Number who said homicide related to combination
Alcohol	39	7	3
Cocaine	11	2	2
Alcohol and cocaine	11	2	1
Alcohol and psychedelics	11	2	2
Alcohol and heroin	6	1	1
Alcohol, cocaine, and psychedelics	6	1	0
No other substance	17	3	—
Total	100	18	9

[a] Percentages are based on number of respondents ($N = 18$) who stated that their homicide was related to marijuana.

We found that 15 of the 18 respondents (83%) who stated that the homicide they committed was related to their marijuana use reported being high on at least one other substance when the homicide occurred. Seven respondents said they were also high (i.e., drunk) on alcohol, which is commonly used together with marijuana and which has consistently been reported in the literature to be linked to violence (see Fagan, 1990). An additional two respondents said they were also high on cocaine; two were also drunk and high on cocaine; 2 were also drunk and high on psychedelics; 1 was also drunk and high on heroin; and 1 reported also being drunk and high on both cocaine and psychedelics.

Table 4 shows that 9 of the 15 respondents (60%) who said they were high on marijuana and at least one other substance believed that the homicide was also related to the combination or mixture of substances. Three of the 9 were respondents who said they were also drunk when the homicide occurred. One of these respondents stated, "One alone you can handle—but two together confuse your mind." Another said, "The alcohol took away my inhibitions, and the pot made me crazy." The third one stated that "the combined effect made me lose self-control."

Also among the 9 respondents who stated that the homicide they committed was related to a marijuana combination or mixture were both of the respondents who were also high on cocaine when the homicide occurred, one of the two respondents who were also drunk and high on cocaine (he stated, "it was the combination, primarily coke, I was hyper, I just couldn't stop"), and both of the respondents who were also drunk and high on psychedelics (one of whom said, "I think that if I would have just been doing marijuana I would have been ok, but the alcohol made me lose it and the purple haze made me crazy so together I was just out of it"). The respondent who was also drunk and high on heroin at the time of the homicide also reported that the homicide he committed was related to a marijuana combination or mixture.

Types of Marijuana-Related Homicides

The 18 homicides related to marijuana were examined from the perspective of a tripartite conceptual framework that specifies the variety of ways that drugs and violence can be related (Goldstein, 1985, 1989a). This conceptualization emerged from, and has been tested in, a number of empirical research studies in addition to the homicide study reported on here (see Goldstein et al., 1987, 1988, 1989b; Ryan et al., 1990; Brownstein et al., 1992).

According to this framework, drugs and violence may be related psychopharmacologically, economic compulsively, and systemically. Violence is considered *psychopharmacological* when it is the consequence of short- or long-term ingestion of specific substances by the perpetrator or victim of the homicide. *Economic compulsive* violence occurs when a drug user feels compelled

to engage in economically oriented violence in order to support costly drug use. Drug-related violence is considered *systemic* when it is the outcome of traditionally aggressive patterns of interaction within the system of drug use and distribution. Systemic homicides include murders committed within dealing organizations as a means of enforcing normative codes, robberies ending in the death of a drug dealer or a consequent fatal retaliation by the associates of a murdered drug dealer, killing of informers in drug cases, killings resulting from disputes between drug dealers over territory, disputes over drugs or drug paraphernalia, punishment of dealers for selling adulterated or phony drugs, punishment for failing to pay one's drug-related debts, and so on.

After a review of qualitative and quantitative interview data about each homicide, the homicide was classified on the basis of the tripartite model. A main reason for each homicide was coded. Main reasons, which may or may not be drug-related, were best inferences about the primary causal mechanism for a homicide taking place. Table 5 shows the main reason classifications for the 18 cases that were reported by respondents to be related to their marijuana use.

Table 5 shows the variety of ways in which the 18 cases were "marijuana-related." Eleven of these homicides (61%) were classified as primarily psychopharmacological in nature because they were seen as resulting from the ingestion of one or more specific substances; marijuana was one of these substances in all 11 cases (up to three substances were coded in each "drug-related" case). One example was a case in which the respondent, who was White and in his early 20s at the time of the crime, killed his ex-girlfriend's boyfriend.

> I was working nights at a transmission place. I'd had a kid with my old lady but we'd been broken up a long time—we'd never been married. She and her boyfriend used to abuse my son. He'd have bruises on his arms and back, the kind that don't come from kids playing. The kid was 6 months old.

Table 5.

Main Reasons for the "Marijuana-Related" Cases (N = 18)

	%	N
Psychopharmacological	61	11
Systemic	6	1
Economic compulsive	6	1
Multidimensional	17	3
Not drug-related	6	1
Unknown	6	1

This one night she'd called me and said: "If you don't come and get your son we're gonna beat him . . . I'm sick of him." I went to the cops and they said I couldn't do anything—that I'd have to fight it in court . . . so I handled it my own way.

One week after the first call she called me again and said come and get him. I picked him up and took him to my aunt's . . . then I went after them to teach them a lesson.

I went to their house and went into the back window, which was a kitchen. I opened a drawer and took out a steak knife. They must have heard me. Someone hit me—I turned around and it was Jim—the boyfriend—I stabbed him. He died on the way to the hospital. She was stabbed 3 times—thigh and fingers—I was arrested 20 minutes later—the cops came within 5 minutes and questioned me—then arrested me.

I was high and drunk. I had a six-pack earlier in the day, and had a couple of shots of rum 20 minutes before [the crime]. I also smoked three bowls of pot about a half hour before. I might have only stabbed the boyfriend once if I hadn't been high—the pot slowed down my reactions.

One homicide was classified as economic-compulsive because it was primarily the result of an economically-oriented crime to obtain money for drugs. In this case the respondent, needing money for marijuana and cocaine, killed a neighbor who refused his request for money. According to the respondent, who was Black and in his early 20s:

I went to his apartment, knocked on his door, he knew me, said to come in. We sat down, talked, I asked him for money, he said he didn't have any to give me. I got angry, I went for him, threw a punch, this led to a fight, he fought back, the fight went on for 10 minutes. It got out of hand, it turned out serious. I choked him, don't know for how long, he died later. A broken neck. I just needed money for reefer and coke. His saying "no" angered me.

The homicide referred to above in which the respondent killed a drug dealer who ripped him off was the one case classified as being primarily systemic in nature, even though the respondent said he was high on marijuana at the time and that the homicide was related to his state of intoxication. This was because the homicide primarily occurred as a result of the drug rip-off. According to the respondent, who was a 20-year-old Hispanic (the interview was conducted in Spanish):

This guy, a Puerto Rican who was a dealer, came to the pizza shop where I worked and an employee there gave him some money for drugs. Me and this other employee were sort of friends. The guy left

and didn't come back. It was 12 noon. At night after work we went looking for the guy. At 9 P.M. The money was for coke and some marijuana. Some of the money was mine.

After we went looking for the guy we found him at an apartment partying. There were three of us; the other guy was a friend of the other employee. The guys with me had knives. I started to get worried—I thought that maybe I shouldn't have gone along. We hung out at his apartment and drank beer and smoked a joint with the dealer and two of his friends. The air was tense. The dealer started to get mean. He called me and my friends things. My friend was pushed by one of the dealer's friends. There was a lot of pushing. "Where's our money?" "What money?" "You're a thief." "Fuck you."

We were only after our money. About 100 bucks.

The dealer came at me, with a bottle. I was scared. We fought. I got a knife from my friend—he handed it to me—I was scared. Everyone was yelling and crazy. I hit the dealer with the knife—he went down—I stabbed him two more times to keep him down. I was crazy. I turned myself in 1 hour later. I think that if I hadn't been smoking the pot I would not have stabbed him so many times.

The marijuana made me think slow and act foolish. I think that if I hadn't been smoking the pot I would not have stabbed him so many times.

Table 5 shows that 3 of the 18 "marijuana-related" homicides (17%) were classified as multidimensional in nature. These homicides contained two or all three dimensions of drug relatedness in sufficiently equal weights that it is impossible to say that one dimension was a more powerful explanation for the killing than any other dimension. One of these cases involved a respondent who was White and 22 years old and who killed a woman he knew during a burglary while he and a friend were high on marijuana, alcohol, and psychedelics. The respondent reported that during the day of the homicide they had shared an ounce of marijuana (they smoked two to three joints 15 minutes before the crime), a quart of beer, and five hits of LSD. The homicide also had a strong economic compulsive dimension, as revealed in the respondent's statement that "I felt I needed reefer, I liked the high, I committed the crime to get money to buy more." According to the respondent:

Me and my roommate (a codefendant) were getting short on money to buy drugs, pay the rent, and use for ourselves. We decided to rob an elderly upper-middle class woman whom [the co-defendant] knew from when he was a maintenance man. He faked an injury to get into her home. As soon as we got in, he bludgeoned the woman. He then called me, I was waiting outside the house, and then we robbed the house.

> We were interested in a strong box. We found out later that it only contained legal documents but no money.

(This respondent also told the interviewer that when he was arrested 2 days later in his apartment, he happened to be rolling 25 joints. Just before letting the police in, he hid most of the marijuana and put one joint into his pocket. The police patted him down during the arrest, but never found the joint. While in the police lockup and away from the guards, he smoked the joint.)

Table 5 also shows that one of the 18 homicides was classified as "not drug-related." Based on the following account provided by the respondent, it did not appear that this homicide primarily resulted from drug use or distribution, even though the respondent claimed it had a drug dimension to it. The homicide, rather, occurred in the context of a "botched" robbery.

> My wife and I were sitting in our apartment. We had a few beers (12 cans). A friend came over. We drank more beer. I had six more and two joints, he had two cans and one joint. He asked me if I wanted to go out and make money with him. Before I knew it we went out and came across this place I was familiar with (oil depot). We went in. He pulled a gun. He said this is a stickup. A truck driver walked in. He and the dispatcher were made to lay down on the floor. He asked where the money was. Was told—no money here. I knew that from my previous knowledge of the place. He looked over at me, I agreed, no money. I felt something was gonna happen. I looked at him and said: "don't shoot." I heard the gun go off. He shot the dispatcher. We left. I came back later by myself, to make sure the guy didn't die. I seen the cops and they were carrying him out under a sheet.

This respondent did not suggest that the robbery was motivated by a compulsive need to obtain money in order to buy drugs. He gave no indication that his partner's decision to shoot the dispatcher was influenced by antecedent drug use. Thus, while the respondent claimed that his own drug use was related to his being present at the scene of the robbery/homicide, the robbery/homicide itself was categorized as being nondrug-related.

Table 5 also shows that one of the 18 "marijuana-related" cases was classified as "unknown." This was because the respondent denied participation in the homicide and did not provide sufficient information about the incident to permit a clear determination as to how it should be classified.

SUMMARY AND DISCUSSION

The purpose of this paper was to examine self-report data concerning the connection between marijuana and homicide based on interviews obtained from

268 individuals incarcerated for homicides committed in New York State in 1984. The main purpose of these interviews had been to obtain the offenders' own accounts as to the drug relatedness of the homicides they committed.

Our analyses focused on the extent of lifetime use of marijuana in the sample, the relationship of marijuana use to the homicides, other drugs that were used by respondents who believed the homicides they committed were related to their marijuana use, and the various ways that the homicides and marijuana were related.

We found that marijuana was the most commonly used *illicit* drug among these offenders; 86% had used the drug sometime in their lives. Marijuana was typically the first illict drug used by the sample, and the drug most likely to have been used on a regular basis. Sixteen percent of the sample said they had been addicted to or dependent on marijuana at some time in their life.

About one-third of the respondents who had ever used marijuana used it on the day of the homicide. About 70% of those who used it on that day said they were experiencing some type of effect from the drug at the time the homicide actually occurred. About 60% of these individuals said they were high on the drug; most of the others said they were coming down from the drug. Twenty-five percent of those who said they were experiencing some effect from marijuana when the homicide happened believed that the homicide was related to that effect; a variety of reasons for this relationship were offered by these respondents. This last group (those who said the homicide and marijuana were related) were 7% of the total interview sample, and 8% of those who said they had ever used marijuana in their lifetime.

We also found that over 80% of those who thought that the homicide was related to their marijuana use were high on at least one other substance when the homicide was committed; typically, this other substance was alcohol. Sixty percent of the respondents who were high on a marijuana–other drug combination believed that the homicide was also related to the drug combination.

We also examined the cases that the respondents believed were marijuana-related from the perspective of a conceptual framework that specifies the variety of ways that drugs and violence can be related. Within this context, we showed that there are various nuances in the ways that marijuana and homicide can be related. In most homicide cases that were reported to be marijuana-related, the nature of that relationship was psychopharmacological.

Our data suggest that while large numbers of people in our sample of homicide offenders had used marijuana in their lifetime, and a fair number even used it on the day of the killing, marijuana rarely played a determining role in the homicides that were committed. When it was a factor in a homicide, it tended to play a secondary role. It was almost always used in combination, and when the killer was high on marijuana, he/she was usually high on something else as well.

The DREIM research study only focused on homicides in one state during one year. The sample was not randomly selected, and only homicide offenders who were convicted and incarcerated were included. Thus, our findings cannot be generalized to the universe of homicide offenders.

Additional limitations regarding the findings of this research arise from gathering self-reports in the prison context. Some respondents seemed to present accounts of their drug use and its relationship to the homicide within a general denial of responsibility. For example, it was relatively common for respondents to claim their partner pulled the trigger, they didn't know a homicide was going to take place, they tried to stop their partner, they returned to the scene of the crime to help the victim, and so on. Their descriptions of their drug use and their states of intoxication at times seemed to be designed to convince the interviewer that they were not responsible for a heinous crime.

Further, in those cases where multiple drugs had been consumed, subjects had difficulty attributing psychopharmacological effects to one drug rather than the other, or to an interactive effect. Similarly, where economic compulsive homicides occurred as a result of a stated need to obtain multiple drugs (e.g., cocaine and marijuana), it was difficult to ascertain whether the need for one of the drugs was more primary than the need for the other.

Despite these limitations, a clear implication from this study is that in-depth interviewing with perpetrators of violence has great potential for contributing to our knowledge of the actual ways and reasons why specific drugs, including marijuana, may be related to violent behavior. Data are likely to be valid and reliable to the extent that liaisons at the prison facilities are respected and well-liked, which endows the interviewers with credibility and legitimacy; the respondent is assured of confidentiality prior to interviewing; and interviewers have a thorough knowledge of the crime and drug subcultures and a high level of competence, experience, and training in interviewing procedures.

Additional studies employing a wide variety of methodological techniques focusing on how the use of marijuana may provoke violent behavior are needed. Studies in which perpetrators of other types of violent behavior (e.g., aggravated assault, robbery) are interviewed about the possible relationship of marijuana and other drugs to those events, and studies specifically designed to learn more about interactive effects of marijuana and other drugs, would also be valuable extensions of the current research. Such studies could generate valuable information that would be helpful for those who work with drug abusers and violent criminals in terms of both treatment planning and staff training.

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Mr. SCOTT. Thank you.
Thank you, Mr. Chairman.
Mr. MCCOLLUM. Thank you, Mr. Scott.
Mr. Heineman, you're recognized for 5 minutes.
Mr. HEINEMAN. Thank you, Mr. Chairman.
Mr. Hedrick, you referred to a Texas study?
Mr. HEDRICK. Yes, studies in Texas and in Florida that have shown that treatment for violent offenders who were incarcerated reduced the recidivism of those prisoners versus ones who did not have treatment.
Mr. HEINEMAN. I just read and am in possession of a Texas study conducted by, I believe, a Washington, DC, think tank that did an analysis of Texas in the last few years, when Texas increased its prison space to three times what it had, and that it showed that the longer the sentences that were given—and I'm not speaking of marijuana users—but the longer the sentences that were given to the people that were convicted of crimes, had a direct impact on the lessening of crime in that State, to the point where they did the analyses of 10 other States, and those States where they liberalized the incarceration rate showed a direct relation to the increase in crime in those States. And they boiled it down to the fact that there was an increased awareness that if they get caught committing a crime, they would do more time.
Now I will be glad to produce that for the gentleman from Virginia, and we're probably talking about apples and oranges, but there has been a study which just shows a direct impact on the length of sentences and the anticipation of incarceration as to whether the crime prevention works, whether that in itself would act as a crime prevention as it relates to States which did liberalize their incarceration lengths of time. And I'll be glad, as I said, to produce that.
And I'd just like to ask Dr. Voth, in your opening statement, sir, you indicated that there was less of a focus at the national level of marijuana. Is that in drugs in general or just marijuana?
Dr. VOTH. I think that's really drugs in general. And marijuana has just fallen prey to that whole defocusing.
Mr. HEINEMAN. How did you arrive at your assessment?
Dr. VOTH. Well, I, and not just I, but our organizations, try to watch the number of antidrug messages, for instance, the drug prevention programs trying to be initiated, the prevention funding activity for grassroots efforts, the whole "gamish" that we look at as to how we consider involvement is going, and all that was steadily falling to the wayside.
Mr. HEINEMAN. Did you have an opportunity to study the number of prosecutions at the Federal level?
Dr. VOTH. I have. I can't comment on those, honestly. I have studied those. Actual prosecutions, I can't comment. I've studied them, but I can't recall.
Mr. HEINEMAN. Where should the national focus come from?
Dr. VOTH. Well, I think the national focus really needs to come from the White House. I think the national focus needs to come from Congress. We need to put aside the legalization debate and the decriminalization debate and we need to be talking about how do we reduce drug use, not whether we debate in the magazines

and in the papers whether we legalize or not, but how do we reduce drug use? All you have to do is look at Holland as an example as to what's happened with lax drug policy. England, Spain, drug use has gone up in those countries.

Mr. HEINEMAN. Did you have an opportunity to come across an article that's dated February 9, 1993, "The White House Suspended Its Drug Testing"?

Dr. VOTH. I am aware of that.

Mr. HEINEMAN. Could you tell us a little bit about that?

Dr. VOTH. Well, I've tried to look into that and I must say I don't have a good answer for you. It was my understanding prior to that time that White House drug testing was required. One of the things that I've espoused all along is that I'd go to the extent of saying all Federal contractors should have to prove a drug-free work place, and that should start at the White House and work its way down.

Mr. HEINEMAN. Do you know if it's still in effect, that policy that does not require drug testing at the White House?

Dr. VOTH. I don't know.

Mr. HEINEMAN. Thank you, sir.

I've used my time.

Mr. MCCOLLUM. Thank you, Mr. Heineman.

We promised Officer Hayes that he could leave at 12:30 today. And before I turn to Mr. Bryant, is there anybody who has a question for Mr. Hayes? Mr. Bryant, do you perhaps have one for him? I'm going to recognize you in a minute, but before I do it, I just want to clear up any questions, if you have any for him.

Mr. BRYANT of Tennessee. Mr. Chairman, I may have a broad question.

Mr. MCCOLLUM. For everybody? All right, well, I'm going to ask one question specific to Officer Hayes; then I'm going to turn to you then.

Just so we get this on the record, Officer, you've been dealing with these young people for some time and I'm curious to know if you think that the situation as far as attitudes that you observe is worsening among the fifth graders, and does the DARE program get deep enough, young enough, or should we be moving the DARE program and encouraging it to go to even younger people than you touch right now?

Mr. HAYES I think the program needs to start earlier, but I think what's more important is that I think we need to follow them through. I think once we hit them in the fifth grade, and as you can probably see there's not a lot of drug users in the fifth graders, but once they get into the middle schools and once they get into the high schools and we're not there and no longer is there a lot of substance abuse education there, the peer pressure hits them and they decide to go ahead and give it a try.

But I think if we followed them through and continued with the substance abuse training, just as we do with math and English and all the other courses, and make them very proficient at saying no and giving them alternatives to drug use, I think that's when we'll have a significant impact on them.

Mr. MCCOLLUM. Mr. Bryant's question, and I'm going to recognize him right now, may last longer than you can stay, but you be

the judge. It's a 5-minute recognition, and you feel free to leave if you have to.

Mr. Bryant, you're recognized for 5 minutes.

Mr. BRYANT of Tennessee. Let me ask my general question first and then maybe have Officer Hayes address it. But then I'd like to move on to something else, some other questions, and then come back to the panel to address that question.

But just, in general, the sentencing guidelines that we have recently had come through this Judiciary Committee, there were a number of recommendations. We let one go by uncontested which allowed, in effect, a reduction in sentencing for growing marijuana plants. And I sometimes wonder if we're not, by doing things like that—Dr. Voth mentioned that Congress also, aside from the President, needs to send a strong message—I sometimes wonder by letting that go by, and I understood the rationale at the time for letting it go by, but if we don't send the wrong signal out there, particularly to our young people, in addition to all these other wrong signals they get from all these other sources, as Mr. Conyers mentioned. I wondered, do you have any comment about where we're actually lowering the sentence for people who produce what are still illegal drugs?

Mr. HAYES I believe, again, it would affect them because a lot of young people think on a time basis, and they'll try to figure it out in their mind, Do they think the crime is worth the time? And that's how they figure it out: if I do this particular crime, I'm not going to serve that much time and I might not even get caught. So it kind of gives them another encouragement factor as to whether they should try it or not. But if you lengthen the time and they see that, OK, if I do get caught, there's a possibility I might get caught and I'm going to spend x amount of time in there, I think they'll think about it a lot harder.

Mr. BRYANT of Tennessee. So you're actually—and I know Mr. Scott had a question about not seeing a relationship between if you get caught and the length of sentence—but you have found that the length of sentencing, what these kids think about, sometimes does serve as a deterrent if it's not worth the time to do the crime?

Mr. HAYES Exactly right.

Mr. BRYANT of Tennessee. OK, thank you.

Dr. Voth, let me ask you specifically about some stuff I think that's going to come up with the next panel, that marijuana is said by most experts to be safer than alcohol and any prescription drugs with motorists. I hear this—every now and then we get somebody in our town meetings who wants to talk about legalizing drugs and he gives us this same old song and dance. From a medical standpoint, could you give us some facts, one way or the other, on that issue of it's the same thing as alcohol, or caffeine, and these other things, and driving?

Dr. VOTH. Sure. Well, first of all, I've spent over 20 years studying this subject and I've probably personally read close to 10,000 of the various research projects that have been on marijuana. Alcohol is a very dangerous drug. We lose a lot of people to that every year. About 100,000 died directly from alcohol. So that's an important piece in this whole picture. Marijuana, I think realistically, you could not document a case where someone smoking marijuana

died from it, but it is very clear that it causes changes in mentation, memory, cognitive abilities. A brandnew study out about 2 weeks shows that college students who smoked it just once a day had problems in their cognitive abilities, clearly an addictive syndrome, respiratory damage. There are changes with the immune system. Some of those are argued, but they're clearly changes that have been in the bulk of the literature. There are changes in the hormonal balance in young people; frequently, those are reversible.

The big picture is probably the most important effect of marijuana, is the effect on the central nervous system: memory, cognitive ability, the ability to learn, and the addictive qualities. And then probably second to that may be the respiratory system. But, clearly, it is not a safe substance, and I will tell you that there are two physicians who sit on the board of NORML who frequently say they are unaware of any great harms that marijuana causes. And as a physician, I consider that irresponsible. And I've seen their testimony, I've debated against them, and it does not bear out what the medical literature says.

Mr. BRYANT of Tennessee. Also, and I'm not familiar with this term, "harm reduction," that I understand is advocated by some of the groups that will testify later, do you have a comment on that?

Dr. VOTH. Absolutely. This is one of the euphemisms that's being passed around now, the idea that we have to accept that there will always be some form of drug use no matter what we do. We need to learn to live around it, reduce the harms that will be associated with it. And as a general construct there's some truth to that. We need to learn how to reduce the harms of drug use.

However, our organization takes the stance that we should be working toward harm prevention, so that people are never harmfully involved in the first place, and once they're are harmfully involved, we have harm elimination. We arrest dealers; we arrest users; we find ways to create disincentives, user accountability, and we create harm elimination. Harm reduction is simply giving in to the whole thing.

Mr. BRYANT of Tennessee. Thank you. I see my time is up.

Mr. MCCOLLUM. Thank you, Mr. Bryant.

I'm going to excuse this panel at this point, but as I do so, I've got one final question or query that is bothering me as I see the question of marijuana plants raised so much in the testimony today, and the question of the punishment we're wrestling a little bit with. It's to any of you, Dr. Voth or any of the rest of you.

If we go to tinkering again with the sentencing guidelines or the minimum mandatory sentences with marijuana, is there value in considering punishment just for the growing of plants? Forget the grams; in other words, we're into this weight business. Most of cocaine and heroin and trafficking deals, in the criminal law the punishment for this is how much in terms of potency, presumably, and quantity of weight or grams. Is there value, since we're dealing in some cases with the growing of marijuana, in just considering punishment not on the basis of weight or grams, but on the size of the field or the number of plants or the type of marijuana, or something of that nature?

Dr. VOTH. Well, there certainly is and some of those get very difficult. What's sinsimella versus something else, and how are you going to measure THC contents? Those get very difficult. Clearly, someone who's growing two or three plants for their own use maybe shouldn't be hit as hard as someone who is growing a thousand. I've always been very supportive of the idea of periodic step points: 50 plants, 100 plants, 500 plants, 1000 plants, so that there is a clear reflective increase for the person that's planning to go out, grow a lot of pot, profiteer from the sale of the pot to people, and should really be hit hard.

The converse way to do it is to take a scientific base as to what we have found an average pot plant to weigh and then just bank on that the whole way through the system, whether that's 200 grams, or 500 grams, or 1,000 grams, or whatever.

Mr. MCCOLLUM. And you believe the latest study shows around 200-and-some-odd grams?

Dr. VOTH. I believe that's what the yield study out of the Mississippi farms showed, but I've not seen it recently here.

Mr. MCCOLLUM. Well, we're going to take a look at that whole area. I don't want to belabor the issue here today because you've raised it with us and I think it's important I've raised it again. But we've got to, as a subcommittee, go back and revisit that issue, and to some extent the testimony of the next panel addresses that question, as it should.

I want to thank all of you for coming today. I appreciate it. I know you stayed a little longer and got on a little later than you hoped you would, and we greatly appreciate your coming and testifying.

Dr. VOTH. Thank you.

Mr. HEDRICK. Thank you.

Mr. MCCOLLUM. Our next panel I'd like to introduce, and they may come up and we'll rearrange the name plates up there.

Our first witness is Mr. Keith Stroup. Mr. Stroup is the founder and executive director of the National Organization for the Reform of Marijuana Laws (NORML), and is a consultant for the National Center on Institutions and Alternatives. Before joining NORML, Mr. Stroup was executive director of the National Association of Criminal Defense Lawyers from 1989 to 1994. He's a graduate of the Georgetown School of Law.

Our next witness is Jeralyn E. Merritt. Ms. Merritt is a defense attorney in private practice in Denver, CO. She primarily represents persons accused of Federal drug crimes and white-collar crimes. Ms. Merritt also is a board member on the National Association of Criminal Defense Lawyers. In 1995 she was the recipient of the first annual Marshall Stearn Award for Outstanding Legislative Achievement.

And our final witness on this panel is Mr. Richard Brookhiser. Mr. Brookhiser is the senior editor of the National Review. In addition to his responsibilities at National Review, Mr. Brookhiser is a contributor and columnist to such publications as Time magazine, the New Yorker magazine, and the New York Observer.

I want to welcome all of you here today. I think what we probably should do is the same as I did earlier, and begin if we can, if Mr. Stroup is available, with his testimony first; if not, we can

go on. I think we've got the nameplates mixed up here. You're Ms. Merritt on the nameplate, Mr. Stroup, but we didn't intend to do that. And we'll begin with your testimony, nonetheless, Mr. Stroup.

STATEMENT OF R. KEITH STROUP, ESQ., INTERIM EXECUTIVE DIRECTOR, NATIONAL ORGANIZATION FOR THE REFORM OF MARIJUANA LAWS (NORML)

Mr. STROUP. Thank you, Mr. Chairman. I want to thank the chairman and members of the subcommittee for the opportunity to be here today.

Since 1970, NORML has been a voice for Americans who believe it is both counterproductive and unjust to treat marijuana smokers as criminals. Arresting and jailing otherwise law-abiding citizens who happen to be marijuana smokers serves no legitimate societal purpose. Rather, it is an enormous waste of valuable law enforcement resources that should be focused on truly serious crimes. And it has a terribly destructive impact on the lives and careers and families of those Americans who are arrested and jailed. We have declared war against a whole segment of our citizens without cause, and it is time to ban marijuana prohibition.

We do not suggest that marijuana is totally harmless or that it cannot be abused. This is true for all drugs, including those which are legal. We do believe that moderate marijuana use is relatively harmless, far less harmful to the user than either tobacco or alcohol, for example, and thus any risk presented by marijuana smoking falls well within the ambit of choice we permit the individual in a free society. Today, far more harm is caused by marijuana prohibition than by marijuana itself.

It's time we put to rest the myth that smoking marijuana is a fringe or deviate activity, engaged in only by those on the margins of American society. In reality, marijuana smoking is extremely common. Marijuana is the recreational drug of choice for millions of mainstream, middle class Americans. According to NIDA, between 65 and 71 million Americans have smoked marijuana and 10 million are current users. Also, NIDA found that 61 percent of all current illicit drug users report that marijuana is the only illicit drug that they use. This figure rises to 80 percent when hashish, a marijuana derivative, is included.

A recent national survey of voters found that 34 percent of the voting public in this country acknowledge having smoked marijuana at one time. Many successful business and professional leaders, including many State and Federal elected officials from both political parties, admit that they have smoked marijuana. We should begin to reflect that reality in our State and Federal legislation and stop acting as if otherwise law-abiding marijuana smokers are part of the crime problem. They are not, and it is wasteful, unjust, and illogical to continue to spend law enforcement resources arresting them.

Marijuana smokers in this country are no different from their nonmarijuana smoking peers, except for their marijuana usage. This was the major finding of the Marijuana Commission report back in 1972. Like most Americans, they are responsible citizens who work hard, raise families, contribute to their communities, and want a safe, crime-free neighborhood in which to live. Because of

our marijuana laws, these citizens face criminal arrest and imprisonment solely because they choose to smoke a marijuana cigarette when they relax, instead of drinking alcohol. This is a misappropriation of our criminal sanction which undermines respect for the law in general and extends the Government into areas of our private lives that are inappropriate.

At NORML, we believe that marijuana smokers, like those who drink alcohol, have a responsibility to behave appropriately and to assure that their recreational drug use is conducted in a responsible manner. Neither marijuana smoking nor alcohol drinking is ever an excuse for misconduct of any kind. And both smokers and drinkers must be held to the same standard as all Americans.

The NORML Board recently issued a statement entitled, "Principles of Responsible Cannabis Use," which defines the conduct which we believe any responsible marijuana smoker should follow. The first principle is that cannabis consumption is for adults only. Many things and activities are suitable for young people, but others absolutely are not. Children do not drive cars, enter into contracts or marry, and they must not use drugs.

The second point is that responsible cannabis consumers do not operate a motor vehicle or other dangerous machinery impaired by cannabis. Public safety demands that impaired drivers be taken off the road and that objective measures of impairment be developed and used.

Third, the responsible cannabis user will carefully consider his or her set and setting and regulate the use accordingly. The responsible user does not hesitate to say "no" when those conditions are not conducive to a safe, pleasant, or productive experience.

Fourth, the use of cannabis, to the extent it impairs health, personal development, or achievement, is abuse and should be resisted by responsible cannabis users. Abuse means harm. Some cannabis use is harmful; most is not. That which is harmful should be discouraged; that which is not need not be.

And, finally, the responsible cannabis user does not violate the rights of others, observes acceptable standards of courtesy and public propriety, and respects the preferences of those who wish to avoid cannabis entirely.

Now, as these principles indicate, we believe there is a difference between use and abuse, and that the Government should limit its involvement and concentrate its resources to discourage irresponsible marijuana use. Responsible marijuana use causes no harm to society and should be of no interest to the Government in a free society.

The War on Drugs is not really about drugs; if it were, tobacco and alcohol would be your primary targets. They are most commonly used and abused drugs in American, and, unquestionably, they cause far more harm to the user and to society than does marijuana.

Instead, the War on Drugs has become a war on marijuana smokers. And in any war there are casualties. Accordingly to the latest FBI data in 1994, nearly one-half million Americans were arrested on marijuana charges. That's the largest number of marijuana arrests that we've ever had in this country in any single year and it's a 67-percent increase over 1991. Eighty-four percent of

those arrests were for simple possession, not for sale. Now those were real people who were paying taxes, supporting their families, working hard to make a better life for their children, when suddenly they were arrested and jailed and treated as criminals solely because of their recreational drug of choice.

This is a travesty of our justice system. It causes enormous pain, suffering, and financial hardship for millions of American families. It also engenders disrespect for the law and for the criminal justice system overall. Responsible marijuana smokers present no threat or danger to America. There is no reason to treat them as criminals. As a society, we do need to find ways to discourage personal conduct of all kinds that is abusive or harmful to others. Responsible marijuana smokers are not the problem, and it's time to stop arresting them.

Our most comprehensive study of marijuana policy was the report of the National Marijuana Commission released in 1972 entitled "Marijuana, a Signal of Misunderstanding." The Marijuana Commission found that moderate marijuana smoking presents no significant risk to the user or to society, and recommended that the country decriminalize minor marijuana offenses; i.e., that penalties be removed for personal use and possession. Following that report, 11 American States adopted modified versions of decriminalization, led by Oregon in 1973. Each of these States retained a modest civil fine for minor marijuana offenses, but eliminated arrest and jail, substituting a citation, similar to a traffic ticket.

The advantage of this approach to marijuana smokers is obvious: the individual is spared the indignity of an arrest and the threat of jail and avoids a criminal record. But the approach also benefits law enforcement by freeing up police to focus on serious crime. Nearly one-third of Americans live in States which now have had a 15- to 20-year real world experience with marijuana decriminalization, and the experience has been overwhelmingly favorable.

Contrary to the fears expressed by some, marijuana usage rates are the same in those States that decriminalized marijuana as in those States where they continue to arrest the marijuana smoker. In short, the evidence indicates that we can stop arresting responsible adult marijuana smokers without harmful consequences.

As a Nation, we've talked too long and too loud in the language of war; it's time we begin to talk in peace. It's time to seek a policy that minimizes the harm associated with both marijuana smoking and marijuana prohibition, a policy that distinguishes between use and abuse and that reflects the importance that we have always attached in this country to the right of the individual to be free from the overreaching power of the State. Most of us would agree that the Government has no business knowing what books we read, the subject of our telephone conversations, or how we conduct ourselves in the privacy of our bedroom. Similarly, whether we smoke marijuana or drink alcohol to relax, it's simply not an appropriate area of concern for the Government.

The subcommittee is right to be concerned about adolescent drug use of all kinds. We all want our children to grow up safe, healthy, and drug-free. The recent data showing an increase in marijuana smoking among adolescents is strong testimony to the failure and ineffectiveness of our current drug education programs, and that

includes most prominently the DARE program. NORML would be pleased to work with this subcommittee and with others to develop more effective programs to discourage adolescent marijuana smoking and to instill in children an understanding that neither marijuana smoking, tobacco smoking, or alcohol drinking are appropriate behaviors for minors.

But we don't arrest responsible adult alcohol drinkers because we want adolescents to avoid alcohol, and neither can we justify arresting responsible adult marijuana smokers to protect our underage children from marijuana smoking. By stubbornly defining all marijuana smoking as criminal, including that which includes adults smoking in the privacy of their home, we are wasting police and prosecutorial resources, clogging courts, filling costly and scarce jail and prison space, and needlessly wrecking the lives and careers of genuinely good citizens. It's time we ended marijuana prohibition, stopped arresting and jailing hundreds of thousands of average Americans, whose only crime is that they smoke marijuana. This is a tragic and senseless war against our own citizens and it must be ended.

The final point I would like to make with the subcommittee is that marijuana should be made immediately available by prescription to the tens of thousands of seriously ill Americans who need marijuana to alleviate their pain and suffering. Of all the negative consequences of marijuana prohibition, none is as tragic as the denial of medical marijuana to those who need it.

Because of the importance we place on the need for medical marijuana, we had asked if we might have Harvard Prof. Lester Grinspoon, an international expert on medical marijuana, present our testimony today, but were told by the committee that would not be possible. Dr. Grinspoon is a professor at Harvard Medical School, a well-published author in the field of drugs and drug policy. He has authored more that 140 articles in scientific journals and has authored 12 books, including most prevalent to this discussion, "Marijuana, the Forbidden Medicine," published in 1983 by Yale University Press and recently translated into nine languages. Dr. Grinspoon remains available, should this committee elect to hear from him at some point.

The question of permitting medical marijuana must be separated from the question of decriminalizing or legalizing marijuana for recreational use. They are separate issues and they must be judged on their own merits. The country has reached a consensus on the former even as we remain divided on the latter.

On the question of whether seriously ill patients should have legal access to marijuana to relieve their pain and suffering, 85 percent of the American public already support this change. Many of them have had a family member or a friend who's been sick with cancer or AIDS or MS or glaucoma, or some other potentially devastating disease, and who has had to risk arrest and jail to obtain marijuana to alleviate the side effects of cancer chemotherapy, overcome the AIDS wasting syndrome, or treat other life-threatening or serious illnesses. Basic compassion and common sense demand that we allow these citizens to use whatever medication is most effective, subject to the supervision of a physician.

Although more research is needed, it is clear already, from available studies and rapidly accumulating anecdotal evidence, that marijuana is a valuable therapeutic in the treatment of a number of serious ailments. It is both less toxic and costly than the conventional medicines for which it may be substituted, and in many cases it is also more effective than the commercially-available drugs it replaces.

Groups such as the American Public Health Association and the Federation of American Scientists have recently endorsed the medical use of marijuana. Marijuana is an effective means of overcoming the nausea and vomiting associated with cancer chemotherapy, the nausea and appetite loss in the wasting syndrome of AIDS; it is also useful for various spastic conditions including MS, paraplegia, and quadriplegia. It also lowers intraocular pressure in those who suffer from open-angle glaucoma. For some people with epilepsy it is the only anticonvulsant that works, and for centuries it has been used as an analgesic and considered by many to be the best approach to migraine.

Many seriously ill patients in this country are already using marijuana to reduce their pain and suffering, even though it means they or their families must risk arrest. Informal buyers' clubs, which supply marijuana to the seriously ill, have been formed in many cities. Some of those clubs are small and clandestine; a few, such as the one in San Francisco, operate openly and serve several thousand clients on a regular basis. Despite these heroic efforts, the underground emergency distribution system reaches only a small proportion of the tens of thousands of patients who could benefit from legal marijuana.

NORML first raised this issue in 1972 when we filed an administrative petition asking that marijuana be reclassified from schedule I to schedule II for just this purpose. After 16 years of legal battles and appeals, in 1988 the DEA's own administrative law judge, Judge Francis Young, found, and I will quote, "marijuana has been accepted as capable of relieving distress of great numbers of very ill people, and doing so with safety under medical supervision. It would be unreasonable, arbitrary and capricious for DEA to continue to stand between those sufferers and the benefits of this substance in light of the evidence in this record."

Judge Young went on to recommend that marijuana be transferred to schedule II. The DEA Administrator went on to overrule Judge Young and the court of appeals allowed that decision to stand, thereby denying medical marijuana to seriously ill patients. That's why Congress must now act to correct this injustice.

Representative Barney Frank, along with Representatives Pelosi and Johnson, recently introduced H.R. 2618 to accomplish that. Representatives Beilenson, Conyers, Dellums, Gunderson, Kennedy, Lofgren, Oliver, Stark, Studs, and Woolsey have since cosponsored that bill. Thirty-six States have adopted legislation designed to facilitate the availability of medical marijuana, ranging from simple resolutions calling on Congress to act, all the way to adoption of State rescheduling bills which would make marijuana medically available. Tragically, none of these programs can be implemented unless Federal law is amended.

A bill similar to this was first introduced in 1981, initially cosponsored by Representative Newt Gingrich and three other Republicans. The measure was reintroduced in 1983 and again in 1985, eventually cosponsored by a bipartisan coalition of more than 75 Members of Congress, including Chairman Bill McCollum. The proposal was the compassionate thing to do then and it is the compassionate thing to do now. Whatever you may feel about the War on Drugs, denying medical marijuana to seriously ill patients should not be part of it. These are truly sick people who find marijuana the most effective way to relieve their pain and suffering, and we cannot in good conscience deny them that medication. I urge this subcommittee to move promptly to approve H.R. 2618.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Stroup follows:]

PREPARED STATEMENT OF R. KEITH STROUP, ESQ., INTERIM EXECUTIVE DIRECTOR, NATIONAL ORGANIZATION FOR THE REFORM OF MARIJUANA LAWS (NORML)

I want to thank Chairman McCollum and the members of the subcommittee for the opportunity to appear here today to present our views regarding marijuana policy.

Since 1970, NORML has been a voice for Americans who believe it is both counter-productive and unjust to treat marijuana smokers as criminals. Arresting and jailing otherwise law-abiding citizens who happen to be marijuana smokers serves no legitimate societal purpose. Rather it is an enormous waste of valuable law enforcement resources that should be focused on truly serious crime, and it has a terribly destructive impact on the lives, careers and families of those Americans who are arrested and jailed. We have declared war against a whole segment of our own citizens, without cause. It is time to end marijuana prohibition.

We do not suggest that marijuana is totally harmless or that it cannot be abused. That is true for all drugs, including those which are legal. We do believe that moderate marijuana use is relatively harmless—far less harmful to the user than either tobacco or alcohol, for example—and that any risk presented by marijuana smoking falls well within the ambit of choice we permit the individual in a free society. *Today, far more harm is caused by marijuana prohibition than by marijuana itself.*

RECREATIONAL MARIJUANA SMOKERS

It's time we put to rest the myth that smoking marijuana is a fringe or deviant activity, engaged in only by those on the margins of American society. In reality, marijuana smoking is extremely common, and marijuana is the recreational drug of choice for millions of mainstream, middle class Americans. According to the most recent NIDA data,[1] between 65 and 71 million Americans have smoked marijuana at some time in their lives, and 10 million are current smokers (have smoked as at least once in the last month). In fact, NIDA found that 61% of all current illicit drug users report that marijuana is the only drug they have used; this figure rises to 80% if hashish (a marijuana derivative) is included. A recent national survey of voters found that 34%—one third of the voting adults in the country—acknowledged having smoked marijuana at some point in their lives.[2] Many successful business and professional leaders, including many state and federal elected officials from both political parties, admit they have smoked marijuana. We should begin to reflect that reality in our state and federal legislation, and stop acting as if otherwise law-abiding marijuana smokers are part of the crime problem. They are not, and it is absurd to continue to spend law enforcement resources arresting them.

Marijuana smokers in this country are no different from their non-smoking peers, except for their marijuana use.[3] Like most Americans, they are responsible citizens who work hard, raise families, contribute to their communities, and want a safe, crime-free neighborhood in which to live. Because of our marijuana laws, these citi-

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[1] National Institute on Drug Abuse, *National Household Survey on Drug Abuse: Population Estimates-1994* (Department of Health and Human Services, Public Health Service, Bethesda, MD,, 1995).

[2] ACLU *National Survey of Voters' Opinions on the Use and Legalization of Marijuana Medical Purposes* (March 31-April 5, 1995).

[3] National Commission on Marijuana and Drug Abuse, *Marijuana, A Signal of Misunderstanding* (New York: The New American Library, Inc., 1972).

zens face criminal arrest and imprisonment solely because they choose to smoke a marijuana cigarette when they relax, instead of drinking alcohol. They simply prefer marijuana over alcohol as their recreational drug of choice. This is a misapplication of the criminal sanction which undermines respect for the law in general and extends government into areas of our private life that are inappropriate.

RESPONSIBLE MARIJUANA USE

At NORML, we believe that marijuana smokers, like those who drink alcohol, have a responsibility to behave appropriately and to assure that their recreational drug use is conducted in a responsible manner. Neither marijuana smoking nor alcohol consumption is ever an excuse for misconduct of any kind, and both smokers and drinkers must be held to the same standard as all Americans.

The NORML Board of Directors recently issued the following statement entitled "Principles of Responsible Cannabis Use," which defines the conduct which we believe any responsible marijuana smoker should follow.

I. ADULTS ONLY

Cannabis consumption is for adults only. It is irresponsible to provide cannabis to children. Many things and activities are suitable for young people, but others absolutely are not. Children do not drive cars, enter into contracts, or marry, and they must not use drugs. As it is unrealistic to demand lifetime abstinence from cars, contracts and marriage, however, it is unrealistic to expect lifetime abstinence from all intoxicants, including alcohol. Rather, our expectation and hope for young people is that they grow up to be responsible adults. Our obligation to them is to demonstrate what that means.

II. NO DRIVING

The responsible cannabis consumer does not operate a motor vehicle or other dangerous machinery impaired by cannabis, nor (like other responsible citizens) impaired by any other substance or condition, including some medicines and fatigue. Although cannabis is said by most experts to be safer than alcohol and many prescription drugs with motorists, responsible cannabis consumers never operate motor vehicles in an impaired condition. Public safety demands not only that impair drivers be taken of the road, but that objective measures of impairment be developed and used, rather than chemical testing.

III. SET AND SETTING

The responsible cannabis user will carefully consider his/her set and setting, regulating use accordingly. "Set" refers to the consumer's values, attitudes, experience and personality, and "setting" means the consumer's physical and social circumstances. The responsible cannabis consumer will be vigilant as to conditions—time, place, mood, etc.—and does not hesitate to say "no" when those conditions are not conducive to a safe, pleasant and/or productive experience.

IV. RESIST ABUSE

Use of cannabis, to the extent that it impairs health, personal development or achievement, is abuse, to be resisted by responsible cannabis users. Abuse means harm. Some cannabis use is harmful; most is not. That which is harmful should be discouraged; that which is not need not be. Wars have been waged in the name of eradicating "drug abuse," but instead of focusing on abuse, enforcement measures have been diluted by targeting all drug use, whether abusive or not. If marijuana abuse is to be targeted, it is essential that clear standards be developed to identify it.

V. RESPECT RIGHTS OF OTHERS

The responsible cannabis user does not violate the rights of others, observes accepted standards of courtesy and public propriety, and respects the preferences of those who wish to avoid cannabis entirely. No one may violate the rights of others, and no substance use excuses any such violation. Regardless of the legal status of cannabis, responsible users will adhere to emerging tobacco smoking protocols in public and private places.

As these principles indicate, we believe there is a difference between use and abuse, and the government should limit its involvement and concentrate its resources to discourage irresponsible marijuana use. *Responsible* marijuana use causes no harm to society and should be of no interest to the government in a free society.

IT'S TIME TO STOP ARRESTING MARIJUANA SMOKERS

The "war on drugs" is not really about drugs; if it were, tobacco and alcohol would be your primary targets. They are the most commonly used and abused drugs in America and unquestionably they cause far more harm to the user and to society than does marijuana. Instead, the war on drugs has become a war on marijuana smokers, and in any war there are casualties. According to the latest FBI statistics, *in 1994 nearly one-half million (482.000) Americans were arrested on marijuana charges.* That is the largest number of marijuana arrests ever made in this country in any single year, and reflects a 67% increase over 1991 (288,000). *Eighty four percent (84%) of those arrests were for possessions not sale.* Those were real people who were paying taxes, supporting their families, and working hard to make a better life for their children; suddenly they are arrested and jailed and treated as criminals, solely because of the recreational drug they had chosen to use. This is a travesty of justice that causes enormous pain, suffering and financial hardship for millions of American families. It also engenders disrespect for the law and for the criminal justice system overall. Responsible marijuana smokers present no threat or danger to America, and there is no reason to treat them as criminals. As a society we need to find ways to discourage personal conduct of all kinds that is abusive or harmful to others. *Responsible marijuana smokers are not the problem and it's time to stop arresting them.*

CONTEMPORARY EXPERIENCE WITH MARIJUANA DECRIMINALIZATION

Our most comprehensive modern study of marijuana policy was the report of the National Commission on Marijuana and Drug Abuse, *Marijuana, A Signal of Misunderstanding* (1972).[4] Established by Congress, the Marijuana Commission found that moderate marijuana smoking presents no significant risk to the user or to society, and recommended that the country "decriminalize" minor marijuana offenses; i.e., that penalties be removed for personal use and possession. Following that report, eleven American states adopted modified versions of decriminalization, led by Oregon in 1973. Each of these states retained a modest civil fine for minor marijuana offenses, but eliminated arrest and jail, substituting a citation, similar to a traffic ticket. The advantage of this approach to the marijuana smoker is obvious: the individual is spared the indignity of an arrest and the threat of jail, and avoids a criminal record. But this approach also benefits law enforcement by freeing up police to focus on serious crime.

Nearly one-third of Americans live in states which have now had a 15–20 year real-world experience with marijuana decriminalization, and the experience has been overwhelmingly favorable.[5] Contrary to the fears expressed by some, marijuana usage rates (both the percentage reporting having ever used marijuana, and the frequency of use by those who do smoke) are the same in states that have decriminalized and in states where marijuana smokers are still arrested. Nor has there been any change in attitudes toward marijuana use among young people (high school seniors) in those states. In short, the evidence indicates that we can stop arresting marijuana smokers without harmful consequences.

TIME FOR PEACE, NOT WAR

As a nation, we've talked too long and too loud in the language of war. It's time that we begin to talk of peace. It's time to seek a policy that minimizes the harm associated with marijuana smoking and marijuana prohibition—a policy that distinguishes between use and abuse, and reflects the importance we have always attached in this country to the right of the individual to be free from the overreaching power of government. Most of us would agree the government has no business knowing what books we read, the subject of our telephone conversations, or how we conduct ourselves in the privacy of our bedroom. Similarly, whether we smoke mari-

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[4] *Id.*

[5] Single E.W., *The Impact of Marijuana Decriminalization: An Update (Journal of Public Health Policy,* Vol. 10, P. 456–66, 1989); Johnston L., O'Malley P., and Bachman J., *Marijuana Decriminalization: The Impact on Youth, 1975–80* (Monitoring the Future, Occasional Paper Series 13); Maloff D., *A Review of the Effects of the Decriminalization of Marijuana,* (Contemporary Drug Problems, Fall 1981).

juana or drink alcohol to relax is simply not an appropriate area of concern for the government.

The subcommittee is right to be concerned about adolescent drug use of all kinds. We all want our children to grow up safe, healthy and drug free. The recent data showing an increase in marijuana smoking among adolescents is strong testimony to the failure and ineffectiveness of our current drug education programs—including most prominently the DARE program. NORML would be pleased to work with this subcommittee and others to develop more effective programs to discourage adolescent marijuana smoking, and to instill in children an understanding that neither marijuana smoking, tobacco smoking or alcohol drinking is appropriate behavior for minors. NORML's involvement in such a campaign might enhance the campaign's credibility with young people.

But we don't arrest responsible adult alcohol drinkers because we want adolescents to avoid alcohol, and neither can we justify arresting responsible adult marijuana smokers to protect our underage children from marijuana smoking. By stubbornly defining all marijuana smoking as criminal, including that which involves adults smoking in the privacy of their home, we are wasting police and prosecutorial resources, clogging courts, filling costly and scarce jail and prison space, and needlessly wrecking the lives and careers of genuinely good citizens. *It's time we ended marijuana prohibition and stopped arresting and jailing hundreds of thousands of average Americans whose only "crime" is that they smoke marijuana. This is a tragic and senseless war against our own citizens: it must be ended.*

MEDICAL MARIJUANA

The final point I would like to make to the subcommittee is that *marijuana should immediately be made available by prescription to the tens of thousands of seriously ill Americans who need marijuana to alleviate pain and suffering.* Of all the negative consequences of marijuana prohibition, none is as tragic as the denial of medicinal marijuana to those who need it.

Because of the importance we place on the need for medical marijuana, we had asked if we might have Harvard Professor Lester Grinspoon, an international authority on medical marijuana, present our testimony here today, but were told by the committee that would not be possible. Dr. Grinspoon, a psychiatrist, is a professor at the Harvard Medical School and a well published author in the field of drugs and drug policy. He has authored more than 140 articles in scientific journals and twelve books, including *Marihuana Reconsidered* (Harvard University Press, 1971); *The Speed Culture: Amphetamine Use and Abuse in America* (Harvard University Press, 1975); *Cocaine: A Drug and Its Social Evolution* (Basic Books, 1976); *Psychedelic Drugs Reconsidered* (Basic Books. 1979); and most relevant for this discussion, *Marihuana, The Forbidden Medicine* (Yale University Press, 1993), which has been translated into nine languages. Dr. Grinspoon is available should this committee elect to hear from him at some point.

The question of permitting medical marijuana must be separated from the question of decriminalizing or legalizing marijuana for recreation use. These are separate issues and they must be judged on their own merits. The country has reached a consensus on the former, even as we remain divided on the latter.

On the question of whether seriously ill patients should have legal access to marijuana to relieve pain and suffering, 85%[6] Of the American public already support this change. Many of them (22%) have had a family member or friend sick with cancer, AIDS, multiple sclerosis, glaucoma or some other potentially devastating disease, who has had to risk arrest and jail to obtain marijuana to alleviate the side effects of cancer chemotherapy, overcome the AIDS wasting syndrome, or treat other life threatening or serious illnesses. Basic compassion and common sense demand that we allow these citizens to use whatever medication is most effective, subject to the supervision of a physician.

Although more research is needed, it is clear from available studies and rapidly accumulating anecdotal evidence that marijuana is a valuable therapeutic in the treatment of a number of serious ailments[7] and that it is both less toxic and costly

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[6] *Ibid.* at 2.

[7] Grinspoon L., Bakalar J., *Marihuana, the Forbidden Medicine* (Yale University Press, New Haven, Conn. 1993); Grinspoon L., Bakalar J., *Marihuana as a Medicine: A Plea for Reconsideration* (JAMA, June 21, 1995, Vol. 273, No. 23); The American Public Health Association, Resolution 9513, *Access to Therapeutic Marijuana/Cannabis* (APHA Public Policy Statements, Washington, DC, November 1995); Federation of American Scientists, *Medical Use of Whole Cannabis* (Washington, DC, 1994); National Task Force on Cannabis, *The Health and Psychological Consequences of Cannabis Use* (Australian Government Publishing Service, Canberra, Australia, 19-need year); Institute of Medicine, National Academy of Sciences, *Marijuana and Health, A Re-*

than the conventional medicines for which it may be substituted. In many cases it is more effective than the commercially available drugs it replaces. Groups such as the American Public Health Association[8] and the Federation of American Scientists[9] have recently endorsed the medical use of marijuana.

Marijuana is an effective means of overcoming the nausea and vomiting associated with cancer chemotherapy, and the nausea and appetite loss in the wasting syndrome of AIDS. It is useful for various spastic conditions including multiple sclerosis, paraplegia, and quadriplegia. It also lowers intraocular pressure in people who suffer from open-angle glaucoma. For some people with epilepsy it is the only anti convulsant that works. For centuries, it has been used as an analgesic and is considered by many to be the best approach to migraine. It is also useful to some patients for the symptomatic treatment of depression, menstrual cramps, asthma and pruritus.

Many seriously ill patients in this country are already using marijuana to reduce their pain and suffering, even though it means they and their families must risk arrest. Informal buyers' clubs, which supply marijuana to the seriously ill, have been formed in many cities. Some of these clubs are small and clandestine; a few, such as the one in San Francisco,[10] operate openly and serve several thousand clients on a regular basis. Despite these heroic efforts, the underground emergency distribution system reaches only a small proportion of the tens of thousands of patients who could benefit from legal marijuana.

NORML first raised this issue in 1972 in an administrative petition asking that marijuana be moved from schedule I to schedule II of the federal Controlled Substances Act, so that it could be prescribed as a medicine. After 16 years of legal battles and appeals, in 1988, the DEA's own administrative law judge, Judge Francis Young, found that "marijuana has been accepted as capable of relieving distress of great numbers of very ill people, and doing so with safety under medical supervision. It would be unreasonable, arbitrary and capricious for DEA to continue to stand between those sufferers and the benefits of this substance in light of the evidence in this record."[11] Judge Young recommended "that the Administrator transfer marijuana from Schedule I to Schedule II, to make it available as a legal medicine." The DEA Administrator overruled Judge Young, and the Court of Appeals allowed that decision to stand, denying medical marijuana to seriously ill patients. Congress must act to correct this injustice.

Rep. Barney Frank (D–MA), along with co-sponsors Nancy Pelosi (D–CA) and Harry Johnston (D–FL), recently introduced H.R. 2618, which reschedules marijuana from schedule I to schedule II, thereby making it available by prescription to patients with serious illnesses. (Reps. Anthony Beilenson (D–CA), John Conyers (D–MI), Ron Dellums (D–CA), Steven Gunderson (R–WI), Joseph Kennedy (D–MA), Zoe Lofgren (D–CA), John Olver (D–MA), Pete Stark (D–CA), Gerry Studs (D–MA) and Lynn Woolsey (D–CA) have also signed on as co-sponsors of this measure). This bill would amend federal law to permit physicians to prescribe marijuana to patients suffering from cancer, AIDS, glaucoma and spastic conditions including multiple sclerosis, paraplegia and quadriplegia. Thirty-six states have adopted legislation designed to facilitate the availability of medical marijuana, ranging from simple resolutions calling on Congress to permit legal medical marijuana, to state rescheduling laws that make marijuana available as a medicine to serious ill patients. Tragically, none of these programs can be implemented unless federal law is amended.

A bill similar to this was first introduced in 1981,[12] initially co-sponsored by Rep. Newt Gingrich (R–GA) and three other Republicans. The measure was reintroduced in 1983 and again in 1985, eventually co-sponsored by a bipartisan coalition of more than 75 members of Congress, including Subcommittee Chair Bill McCollum. The proposal was the compassionate thing to do then, and it is the compassionate thing to do now. Whatever you may feel about the war on drugs, denying medical marijuana to seriously ill people should not be part of it. These are seriously ill people who find marijuana the most effective way to relieve their pain and suffering and

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port of a Study by a Committee of the Institute of Medicine (National Academy Press, Washington, DC, 1982).

[8] The American Public Health Association, Resolution 9513, *Access to Therapeutic Marijuana / Cannabis* (APHA Public Policy Statements, Washington, DC, 1995).

[9] Federation of American Scientists, *Medical Use of Whole Cannabis (Washington, DC, 1994).*

[10] Goldberg C., *Marijuana Club Helps Those In Pain* (N.Y. Times, February 25, 1996).

[11] *In the Matter of Marijuana Rescheduling Petition, Docket 86–22, Opinion, Recommended Ruling, Finding of Fact, Conclusions of Law, and Decision of Administrative Law Judge, September 6, 1988* (Drug Enforcement Agency, Washington, DC, 1988).

[12] H.R. 4498 (94th Congress, 2nd session).

we cannot, in good conscience, deny them that medication. I urge this subcommittee to move promptly to approve H.R. 2618 to allow the medical use of marijuana.

ATTACHMENTS

DECRIMINALIZATION

1. Official NORML Policy Statement.
2. Zimmer L., Morgan J., *Exposing Marijuana Myths, An Objective Review of the Scientific Literature* (The Lindesmith Center, New York, July 1995).
3. *Deglamorising Cannabis,* (Editorial, The Lancet, Vol. 346, Nov. 11, 1995).

MEDICAL USE

1. Grinspoon L., Bakalar J., *Marijuana as Medicine, A Plea for Reconsideration* (JAMA, June 21, 1995).
2. ACLU *National Survey of American Voters' Opinions on the Use and Legalization of Marijuana for Medical Purposes,* March 31-April 1, 1995.
3. APHA Resolution 9513, *Access to Therapeutic Marijuana/Cannabis, November 1995.*
4. Federation of American Scientists' statement, *Medical Use of Whole Cannabis,* November 1994.
5. *The Health and Psychological Consequences of Cannabis Use* (Conclusions, Australian National Task Force on Cannabis, Monograph Series No. 25).

NATIONAL ORGANIZATION FOR THE REFORM OF MARIJUANA LAWS
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NORML

– OFFICIAL POLICY STATEMENT –

DECRIMINALIZATION

NORML supports the removal of all criminal and civil penalties for the private possession of marijuana for personal use. The right of possession should include other acts incidental to such possession, including cultivation and transportation for personal use and casual non-profit transfers of small amounts of marijuana.

REGULATION

NORML advocates a system of marijuana regulation that would include age restrictions, public health and agricultural controls, and taxation of marijuana sold for profit. A well-planned system of marijuana regulation would discourage abuse, protect public health and safety, reduce crime associated with marijuana's illicit distribution, and raise large sums of new tax revenue. Regulation is the inevitable replacement of prohibition.

PERSONAL USE AND POSSESSION

Removal of criminal penalties for the individual who uses marijuana in private is consistent with traditional American values of personal choice, individual freedom, and the right to privacy. Marijuana reform is not based on the premise that marijuana use is harmless or that it should be encouraged, but rather that such use should fall within the ambit of individual choice permitted in a free society. It is a social policy aimed at reducing the harm caused by defining marijuana users as criminals.

Marijuana reform reduces the immense human, fiscal, and social costs of marijuana prohibition by allowing law enforcement efforts to be concentrated on serious crimes.

NORML opposes arbitrary quantity limitations as the standard for defining what constitutes possession for personal use. Marijuana users, like wine drinkers and tobacco smokers, often have more marijuana in their possession than can be immediately consumed. Similarly, individual usage and consumption patterns vary greatly. While quantity limitations appear to be a necessary interim statutory approach to marijuana reform, the law should reflect the reality of differences in usage patterns and behavior—and should recognize the inherent shortcomings of arbitrary ounce limitations.

CULTIVATION FOR PERSONAL USE

The right to possess marijuana for personal use includes the right to grow small amounts for personal consumption. Removal of criminal penalties for the private cultivation of marijuana for personal use would provide a legal supply of marijuana without the establishment of a legal distribution system.

NON-PROFIT TRANSFERS

The right to possess marijuana for personal use should include the right to transfer small amounts of marijuana between adults for insignificant consideration.

Most smokers share their marijuana with friends, and often the courtesy is returned. Thus they may purchase more marijuana than they personally will use, selling some to friends at cost. Such transfers, involving little or no profit, should be treated as incidental to personal use, rather than commercial sales.

DISCOURAGING ABUSE

NORML fully supports a discouragement policy toward the abuse of all drugs, including alcohol, tobacco, and marijuana. NORML particularly discourages the recreational use of all drugs by children. This policy should be implemented by a public education campaign aimed at warning users and potential users of the risks involved with the use of all drugs. Such warnings should reflect an honest scientific and medical concern.

Most importantly, criminal penalties should not be applied against those who use such drugs despite warnings to the contrary. The limits of criminal sanctions must be recognized and not applied to private social conduct that constitutes no direct threat of harm to others. Society should have confidence in the ability of informed individuals to decide whether to assume any personal risks that accompany recreational drug use.

ADOLESCENT USE

NORML is strongly committed to the concept that growing up should be drug-free. NORML desires to help establish meaningful communication within the family based on honest health and social consequences related to all drugs. NORML believes it is proper to restrict the distribution of marijuana to adults only.

Marijuana and Driving

NORML strongly discourages the driving of automobiles or other vehicles while under the influence of marijuana or any other drug. NORML recognizes the legitimate public interest in prohibiting such conduct.

Medical Research

Fuller coordination of the marijuana research conducted by governmental and private agencies is needed to reduce narrowness or duplication of effort, to assure diversity in new approaches and new objectives, and to provide efficient integration of findings into the available body of knowledge.

NORML urges the immediate revision of federal and state laws to make marijuana legally available for persons who would benefit from its medical use and encourages further research into its medical utility.

NORML also urges that a more appropriate federal agency than the National Institute on Drug Abuse be selected to direct federal efforts to these ends.

Marijuana Eradication

NORML is opposed to the use of paraquat and all other chemical or biological agents intended to destroy or identify marijuana under cultivation in any country.

NORML supports the prohibition of the use of herbicides to spray marijuana as consistent with the protection of public health and the environment.

Role of the Military in Law Enforcement

NORML opposes any use of the military in civilian domestic law enforcement. NORML further opposes the use of any military equipment or personnel in the direct or indirect enforcement of marijuana laws in the United States or on the high seas.

Public versus Non-Public Use

NORML recognizes the individual rights of non-smokers not to be subjected to discomfort, or whatever health risks may arise from the smoking of any substance in designated non-smoking areas in confined public places. NORML opposes, however, the use of criminal law to regulate such activities.

Destruction of Criminal Records

NORML urges the enactment of legislation to provide for the destruction of the criminal records of persons arrested or convicted of marijuana offenses prior to the enactment of legislation repealing criminal penalties for such offenses. NORML supports the full restoration of all rights and privileges denied or diminished as the result of prior marijuana arrests or convictions.

Potency of Marijuana Products

NORML believes that statutory distinctions based on potency are neither desirable nor feasible at the present time. Because of current usage patterns and the practical problems inherent in controlling potency in an unregulated market, distinctions between less potent and more potent variations are unwarranted, impractical and unfair.

Unlawful Sale

It must be recognized that where personal use and possession of marijuana are no longer serious crimes, it is both inconsistent and irrational to provide lengthy prison terms for those who distribute marijuana for profit.

NORML strongly opposes any increase in the current federal and state penalties pertaining to cultivating, importing or distributing marijuana.

Marijuana Research and Women

NORML urges revision of current FDA policies regarding marijuana research and women. Current regulations severely limit research on women of child-bearing age, despite the fact that most women who do smoke marijuana are of that age group, and the use of marijuana by young women is rapidly approaching parity with males. NORML urges repeal of the regulations prohibiting marijuana research on consenting and fully informed women, regardless of age. Furthermore, NORML urges the National Institute on Drug Abuse and other appropriate agencies to establish studies of the effects of marijuana on women as a priority issue and to develop contracts to encourage such research.

Single Convention Treaty

NORML urges the United States government to take appropriate action to remove marijuana from The Single Convention Treaty on Narcotic Drugs of 1961.

Americans Imprisoned Abroad

NORML urges the U.S. government to work for the protection and return of its citizens imprisoned abroad for marijuana-related offenses. Expansion and improvement of consular services and establishment of prisoner exchange treaties must be considered top priorities in government efforts to safeguard the human rights and welfare of these prisoners.

NORML also urges the U.S. government to curtail the illegal activities of Drug Enforcement Administration agents and other agencies stationed overseas and to thoroughly reevaluate its total international narcotics control efforts.

The Lindesmith Center

Exposing Marijuana Myths: A Review of the Scientific Evidence

Lynn Zimmer
Associate Professor of Sociology, Queens College

John P. Morgan
Professor of Pharmacology, City University of New York Medical School

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Exposing Marijuana Myths: A Review of the Scientific Evidence

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October 1995

The Lindesmith Center is a research institute established in 1994 to support research and broaden debate on drug policy reform. The Center, a project of the Open Society Institute, produces publications, provides a link between scholars and the media, sponsors forums, houses a library and provides a wide range of information on drug policy issues. The Lindesmith Center is named for Alfred Lindesmith, the first U.S. scholar to challenge conventional thinking on drug policy. Although the research agenda of the Center focuses on issues relating to drug policy reform, it invites participation by scholars from all perspectives.

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INTRODUCTION

Since the 1920s, supporters of marijuana prohibition have exaggerated the drug's dangers. In different eras, different claims have gained prominence, but few have ever been abandoned. Indeed, many of the "reefer madness" tales that were used to generate support for early anti-marijuana laws continue to appear in government and media reports today.

For a while in the 1970s, it seemed as if scientific inquiries were beginning to influence the government's marijuana policies. Following thorough reviews of the existing evidence by scholars[1] and official commissions,[2] criminal penalties for marijuana offenses were lessened and a number of states moved in the direction of decriminalization.[3] However, in response to lingering concerns about marijuana's potential toxicity, the government expanded its funding of scientific research, mostly through the newly-created National Institute on Drug Abuse (NIDA).

Probably the most important studies of the 1970s were three large "field studies" in Greece, Costa Rica and Jamaica. These studies, which evaluated the impact of marijuana on users in their natural environments, were supplemented by clinical examinations and laboratory experiments oriented toward answering the questions about marijuana that continued to be debated in the scientific literature. The data from these studies, published in numerous books and scholarly journals, covered such matters as marijuana's effects on the brain, lungs, immune and reproductive systems, its impact on personality, development, and motivational states, and its addictive potential.[4]

Although these studies did not answer all remaining questions about marijuana toxicity, they generally supported the idea that marijuana was a relatively safe drug -- not totally free from potential harm, but unlikely to create serious harm for most individual users or society. In the years since, thousands of additional studies have been conducted, many of them funded by NIDA, and together they reaffirm marijuana's substantial margin of safety. Our review of that body of work reveals an occasional study indicating greater toxicity than previously thought. But in nearly all such cases, the methodologies were seriously flawed and the findings could not be replicated by other researchers.

Especially since the 1980s, when the federal government's renewed war on cannabis began, both the funding of marijuana research and the dissemination of its findings have been highly politicized. Indeed, NIDA's role seems to have become one of service to the War on Drugs. Dozens of claims of toxicity appear in its documents, despite the existence of scores of scientific studies refuting their validity. At the same time, studies that fail to find serious toxicity are ignored.

In the following pages, we review the scientific evidence surrounding the most prominent of the anti-marijuana claims.

CLAIM #1: MARIJUANA USE IS INCREASING AT AN ALARMING RATE

Reports of a recent slight increase in marijuana use, especially among youth, are being used to convince Americans that a renewed campaign about the drug's dangers is necessary to avert an impending epidemic.

THE FACTS

According to government surveys of the general population, marijuana use began decreasing in 1980, after more than a decade of steady increase. By 1990, the downward trend showed signs of slowing, but use-rates remained substantially lower than those recorded in the 1970s.

> For example, among 12-17 year olds, past year marijuana use was about 8% in 1992, compared to 24.1 % in 1979. Among 18-25 year olds, past year use was 23 % in 1992, compared to 46.9 % in 1979.[5]

A separate survey of high school students shows similar trends, with use-rates in the 1990s well below those reported in the 1970s. However, after reaching an all-time low in 1992, they increased slightly during the next two years.

Lifetime Prevalence of Marijuana
High School Seniors, 1976-1994[6]

1976	1978	1980	1982	1984	1986	1988	1990	1992	1994
52.8	59.2	60.3	58.7	54.9	50.9	47.2	40.7	32.6	38.2

The High School Survey was originally conceived by the National Institute on Drug Abuse (NIDA) as a measure of non-pathological drug use. This is still what it measures.

> Adolescence is a time of experimentation, with drug use as well as other activities. Most adolescent drug users do not go on to become "drug abusers." Indeed, most adolescent drug users, after a few years of experimentation, cease using illegal drugs altogether.

We will probably never know why marijuana use-rates go up and down over time. However, it is worth noting that the recent increase occurred among the same population of young people who had been exposed to a decade-long anti-marijuana campaign in the schools and the media. That campaign, based on exaggerations of marijuana's harms and a "just say no" ideology, has clearly failed.[7]

Young people, and Americans generally, need to know the scientific evidence about marijuana if they are to make informed decisions about both their own drug use and the future of American drug policy.

CLAIM #2: MARIJUANA POTENCY HAS INCREASED SUBSTANTIALLY

The claim that there has been a 10-, 20- or 30-fold increase in marijuana potency since the 1970s is used to discredit previous studies that showed minimal harm caused by the drug and convince users from earlier eras that today's marijuana is much more dangerous.

THE FACTS

For more than 20 years the government-funded Potency Monitoring Project (PMP) at the University of Mississippi has been analyzing samples of marijuana submited by U.S. law enforcement officials. At no time have police seizures reflected the marijuana generally available to users around the country and, in the 1970s, they were over-represented by large-volume low-potency Mexican kilobricks.[8]

During the 1970s, the PMP regularly reported potency averages of under 1%, with a low of 0.4% in 1974. Quite clearly, these averages underestimate the THC content of marijuana smoked during this period.

> Marijuana of under 0.5% potency has almost no psychoactivity. While it is possible that people sometimes obtained marijuana of such low potency, for the drug to have become popular in the 1960s and 1970s, most people must have regularly obtained marijuana with higher THC content.
>
> Until the late 1970s, PMP samples included none of the traditionally higher-potency cannabis products, such as buds and sinsemilla, even though these products were available on the retail market. When changes in police practices resulted in their seizure, PMP potency averages increased.
>
> Every independent analysis of potency in the 1970s found higher THC averages than the PMP. For example, the 59 samples submitted to PharmChem Laboratories in 1973 averaged 1.62%; only 16 (27%) contained less than 1% THC, more than half were over 2% and about one-fifth were over 4%. In 1975, PharmChem samples ranged from 2 to 5%, with some as high as 14% -- nearly 30 times the .71 average reported by the PMP.[9]

After 1980, both the number and variety of official seizures increased dramatically, improving the validity of the PMP's reported averages, although they continue to be based on "convenience" rather than "representative" samples.

As shown below, average potency has remained essentially unchanged since the early 1980s:

Mean Percentage THC of Seized Marijuana, 1981-1993
Mississippi Potency Monitoring Project

1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
2.28	3.05	3.23	2.39	2.82	2.30	2.93	3.29	3.06	3.36	3.36	3.00	3.32

Even if potency had increased slightly since the 1970s, it would not mean that smoking marijuana had become more dangerous. In fact, since the primary health risk of marijuana comes from smoking, higher potency products can be less dangerous because they allow people to achieve the desired effect by inhaling less.

CLAIM #3: MARIJUANA IS A DRUG WITHOUT THERAPEUTIC VALUE

Proposals to make marijuana legally available as a medicine are countered with claims that safer, more effective drugs are available, including a synthetic version of delta-9-THC, marijuana's primary active ingredient.

THE FACTS

For thousands of years, throughout the world, people have used marijuana to treat a variety of medical conditions.[10]

Today, in the United States, such use is prohibited. Although 36 states have passed legislation to allow marijuana's use as a medicine, federal law preempts their making marijuana legally available to patients.

A number of studies have shown that marijuana is effective in reducing nausea and vomiting,[11] lowering intraocular pressure associated with glaucoma,[12] and decreasing muscle spasm and spasticity.[13] Today, many people use marijuana for these and other medical purposes, despite its illegal status.[14]

> People undergoing cancer chemotherapy have found smoked marijuana to be an effective anti-nauseant -- often more effective than available pharmaceutical medications.[15] Indeed, 44 % of oncologists responding to a questionnaire said they had recommended marijuana to their cancer patients; others said they would recommend it if it were legal.[16]
>
> Marijuana is also smoked by thousands of AIDS patients to treat the nausea and vomiting associated with both the disease and AZT drug therapy. Because it stimulates appetite, marijuana also counters HIV-related "wasting," allowing AIDS patients to gain weight and prolong their lives.

In 1986, a synthetic delta-9-THC capsule (Marinol) was marketed in the United States and labeled for use as an anti-emetic. Despite some utility, this product has serious drawbacks, including its cost. For example, a patient taking three five-milligram capsules a day would spend over $5,000 to use Marinol for one year. In comparison to the natural, smokeable product Marinol also has some pharmacological shortcomings.[17]

> Because THC delivered in oral capsules enters the bloodstream slowly, it yields lower serum concentrations per dose.
>
> Oral THC circulates in the body longer at effective concentrations, and more of it is metabolized to an active compound; thus, it more frequently yields unpleasant psychoactive effects.
>
> In patients suffering from nausea, the swallowing of capsules may itself provoke vomiting.

In short, the smoking of crude marijuana is more efficient in delivering THC and, in some cases, it may be more effective.

The continuing illegality of medical marijuana is based more on political than scientific considerations. Although during the 1970s the government supported exploration into marijuana's therapeutic potential,[18] its role has become one of blocking new research[19] and opposing any change in marijuana's legal status.[20]

CLAIM #4: MARIJUANA CAUSES LUNG DISEASE

It is frequently claimed that marijuana smoke contains such high concentrations of irritants that marijuana users' risk of developing lung disease is equal to or greater than that of tobacco users.

THE FACTS

Except for their psychoactive ingredients, marijuana and tobacco smoke are nearly identical.[21] Because most marijuana smokers inhale more deeply and hold the smoke in their lungs, more dangerous material may be consumed per cigarette. However, it is the total volume of irritant inhalation -- not the amount in each cigarette -- that matters.

> Most tobacco smokers consume more than 10 cigarettes per day and some consume 40 or more. Regular marijuana smokers seldom consume more than three to five cigarettes per day and most consume far fewer. Thus, the amount of irritant material inhaled almost never approaches that of tobacco users.

Frequent marijuana smokers experience adverse respiratory symptoms from smoking, including chronic cough, chronic phlegm, and wheezing. However, the only prospective clinical study shows no increased risk of crippling pulmonary disease (chronic bronchitis and emphysema).

> Since 1982, UCLA researchers have evaluated pulmonary function and bronchial cell characteristics in marijuana-only smokers, tobacco-only smokers, smokers of both, and non-smokers. Although they have found changes in marijuana-only smokers, the changes are much less pronounced than those found in tobacco smokers.
>
> The nature of the marijuana-induced changes were also different, occuring primarily in the lung's large airways -- not the small peripheral airways affected by tobacco smoke. Since it is small-airway inflamation that causes chronic bronchitis and emphysema, marijuana smokers may not develop these diseases.[22]

In an epidemiological survey, approximately 1200 subjects gave information on smoking and pulmonary function at two-year intervals. A large percentage of the subjects underwent pulmonary function testing. Although a small group who reported previous marijuna smoking had significant pulmonary abnormalities, current marijuana smokers had no significant reduction in any pulmonary functions.[23]

There are no epidemiological or aggregate clinical data suggesting that marijuana-only smokers develop lung cancer. However, since some bronchial cell changes appear to be pre-cancerous, an increased risk of cancer among frequent marijuana smokers is possible.[24]

Since the pulmonary risks associated with marijuana are related to smoking, the danger is eliminated with other routes of administration. For committed smokers, pulmonary risk might be reduced with higher-potency products, which produce desired psychoactive effects with less inhalation of irritants. Smokers could also be encouraged to abandon deep inhalation and breath-holding, which increase drug delivery only slightly. Finally, pulmonary risk might be reduced if marijuana were smoked in water pipes rather than cigarettes.[25]

CLAIM #5: MARIJUANA IMPAIRS IMMUNE SYSTEM FUNCTIONING

It has been widely claimed that marijuana substantially increases users' risk of contracting various infectious diseases. First emerging in the 1970s, this claim took on new significance in the 1980s, following reports of marijuana use by people suffering from AIDS.

THE FACTS

The principal study fueling the original claim of immune impairment involved preparations created with white blood cells that had been removed from marijuana smokers and controls. After exposing the cells to known immune activators, researchers reported a lower rate of "transformation" in those taken from marijuana smokers.[26]

However, numerous groups of scientists, using similar techniques, have failed to confirm this original study.[27]

In fact, a 1988 study demonstrated an increase in responsiveness when white blood cells from marijuana smokers were exposed to immunological activators.[28]

Studies involving laboratory animals have shown immune impairment following administration of THC, but only with the use of extremely high doses. For example, one study demonstrated an increase in herpes infection in rodents given doses of 100 mg/kg/day -- a dose approximately 1000 times the dose necessary to produce a psychoactive effect in humans.[29]

There have been no clinical or epidemiological studies showing an increase in bacterial, viral, or parasitic infection among human marijuana users. In three large field studies conducted in the 1970s, in Jamaica, Costa Rica and Greece, researchers found no differences in disease susceptibility between marijuana users and matched controls.[30]

Marijuana use does not increase the risk of HIV infection; nor does it increase the onset or intensity of symptoms among AIDS patients.[31] In fact, the FDA decision to approve the use of Marinol (synthetic THC) for use in HIV-wasting syndrome relied upon the absence of any immunopathology due to THC.[32]

Today, thousands of people with AIDS are smoking marijuana daily to combat nausea and increase appetite. There is no scientific basis for claims that this practice compromises their immune responses. Indeed, the recent discovery of a peripheral cannabinoid receptor asociated with lymphatic tissue should encourage aggressive exploration of THC's potential use as an immune-system stimulant.[33]

CLAIM #6: MARIJUANA HARMS SEXUAL MATURATION AND REPRODUCTION

Marijuana has been said to interfere with the production of hormones associated with reproduction, causing possible infertility among adult users and delayed sexual development among adolescents.

THE FACTS

There is no evidence that marijuana impairs male reproductive functioning.

The Jamaican and Costa Rican field studies detected no differences in hormone levels between marijuana users and non-users.

In epidemiological surveys of marijuana users, no problems with fertility have emerged as important.

In 1974, researchers reported diminished testosterone, reduced sexual function and abnormal sperm cells in males identified as chronic marijuana users.[34] In a laboratory study, the same researchers reported an acute decrease in testosterone, but no chronic effect after nine weeks of smoking; they did not evaluate sperm volume or quality.[35] In other laboratory studies, researchers have been generally unable to replicate these findings,[36] although by administering very high THC doses -- up to 20 cigarettes per day for 30 days -- one study found a slight decrease in sperm concentrations.[37] In all studies, test results remained within normal ranges and probably would not have affected actual fertility.

Severe adverse consequences have also been produced in male laboratory animals, although only with extremely high daily THC doses.[38]

More importantly, in both the human and animal laboratory studies, all observed changes were reversed once THC adminsttation was halted.

The claim that marijuana impairs female reproductive functioning in humans has no support in the scientific literature.

There have been no epidemiological studies indicating diminished fertility in female users of marijuana, and a recent survey found no impact of chronic marijuana use on female sex hormones.[39]

Animal studies show hormonal changes and depressed ovulation following extremely high daily doses of THC. As occurs with males, these changes disappear once the experiment is completed.[40] In addition, when THC was administered to female monkeys for an entire year, they developed tolerance to its hormonal effects and normal cycles were reestablished.[41]

Almost immediately following publication of the few studies showing a marijuana impact on reproductive hormones, warnings about marijuana's potential impact on adolescent sexual development began to appear.

Other than one case report of a 16-year old marijuana smoker who had failed to progress to puberty,[42] there has been nothing to indicate that such a potential exists. In whatever other ways one might consider marijuana to be bad for adolescents, it does not retard their sexual development.

CLAIM #7: MARIJUANA USE DURING PREGNANCY HARMS THE FETUS

A powerful accusation in anti-drug campaigns is that children are permanently harmed by their mothers' use of drugs during pregnancy. Today, it is commonly claimed that marijuana is a cause of birth defects and development deficits.

THE FACTS

A number of studies claimed reported low birth weight and physical abnormalities among babies exposed to marijuana in utero.[43] However, when other factors known to affect pregnancy outcomes were controlled for -- for example, maternal age, socio-economic class, and alcohol and tobacco use -- the association between marijuana use and adverse fetal effects disappeared.[44]

Numerous other studies have failed to find negative impacts from marijuana exposure.[45] However, when negative outcomes are found, they tend to be widely publicized, regardless of the quality of the study.

> It is now often claimed that marijuana use during pregnancy causes childhood leukemia. The basis for this claim is one study, in which 5% of the mothers of leukemic children admitted to using marijuana prior to or during pregnancy. A "control group" of mothers with normal children was then created and questioned by telephone about previous drug use. Their reported .5 % marijuana use-rate was used to calculate a 10-fold greater risk of leukemia for children born to marijuana users.[46] Given national surveys showing marijuana prevalence rates of at least 10%, these "control group" mothers almost certainly under-reported their drug use to strangers on the telephone.

Also used as evidence of marijuana-induced fetal harm are two longitudinal studies, in which the children of marijuana users were examined repeatedly. However, on closer examination, the effects of marijuana appear to be quite minimal, if existent at all.

> After finding a slight deficit in visual responsiveness among marijuana-exposed newborns, no differences were found at six months, 12 months, 18 months, or 24 months.[47] At age 3, the only difference (after controlling for confounding variables) was that children of "moderate" smokers had superior psycho-motor skills. At age 4, children of "heavy" marijuana users (averaging 18.7 joints/week) had lower scores on one subscale of one standardized test of verbal development.[48] At age 6, these same children scored lower on one computerized task -- that measuring "vigilance." On dozens of others scales and subscales, no differences were ever found.[49]

> In another study, standardized IQ tests were administered to marijuana-exposed and unexposed three year-olds. Researchers found no differences in the overall scores. However, by dividing the sample by race, they found -- among African-American children only -- lower scores on one subscale for those exposed during the first trimester and lower scores on a different subscale for those exposed during the second trimester.[50]

Although it is sensible to advise pregnant women to abstain from using most drugs -- including marijuana -- the weight of scientific evidence indicates that marijuana has few adverse consequences for the developing human fetus.

CLAIM #8: MARIJUANA CAUSES BRAIN DAMAGE

Critics state that marijuana has been shown to damage brain cells and that this damage, in turn, causes memory loss, cognitive impairment, and difficulties in learning.

THE FACTS

The original basis of this claim was a report that, upon post-mortem examinations, structural changes in several brain regions were found in two rhesus monkeys exposed to THC.[51] Because these changes primarily involved the hippocampus, a cortical brain region known to play an important role in learning and memory, this finding suggested possible negative consequences for human marijuana users.

Additional studies, employing rodents, reported similar brain changes.

However, to achieve these results, massive doses of THC -- up to 200 times the psychoactive dose in humans -- had to be given . In fact, studies employing *100 times* the human dose have failed to reveal any damage.[52]

In the most recently published study, rhesus monkeys were exposed through face-mask inhalation to the smoke equivalent of four to five joints per day for one year. When sacrificed seven months later, there was no observed alteration of hippocampal architecture, cell size, cell number, or synaptic configuration. The authors conclude:

"while behavioral and neuroendocrinal effects are observed during marijuana smoke exposure in the monkey, residual neuropathological and neurochemical effects of marijuana exposure were not observed seven months after the year-long marijuana smoke regimen."[53]

Thus, 20 years after the first report of brain damage in two marijuana-exposed monkeys, the claim of damage to brain cells has been effectively disproven.

No post-mortem examinations of the brains of human marijuana users have ever been conducted. However, numerous studies have explored marijuana's effect on brain-related cognitive functions. Many employ an experimental design -- in which subjects are given marijuana in a laboratory setting, and then compared to controls on a variety of measures involving attention, learning and memory.

In a number of studies, no significant differences were detected.[54] In fact, there is substantial research demonstrating that that marijuana intoxification does *not* impair the retreival of information learned previously.[55] However, there is evidence that marijuana, particularly in high doses, may interfere with users' ability to transfer new information into longterm memory.[56]

While there is general agreement that, while under the influence of marijuana, learning is less efficient,[57] there is no evidence that marijuana users -- even longterm users -- suffer permanent impairment. Indeed, numerous studies comparing chronic marijuana users with non-user controls have found no significant differences in learning, memory recall or other cognitive functions.[58]

CLAIM #9: MARIJUANA IS AN ADDICTIVE DRUG

It is now frequently stated that marijuana is profoundly addicting and that any increase in prevalence of use will lead inevitably to increases in addiction.

THE FACTS

Essentially all drugs are used in "an addictive fashion" by some people. However, for any drug to be identified as highly addictive, there should be evidence that substantial numbers of users repeatedly fail in their attempts to discontinue use and develop use-patterns that interfere with other life activities.

National epidemiological surveys show that the large majority of people who have had experience with marijuana do not become regular users.

> In 1993, among Americans age 12 and over, about 34% had used marijuana sometime in their life, but only 9% had used it in the past year, 4.3% in the past month, and 2.8% in the past week.[59]

> A longitudinal study of young adults who had first been surveyed in high school also found a high "discontinuation rate" for marijuana. While 77% had used the drug, 74% of those had not used in the past year and 84% had not used in the past month.[60]

> Of course, even people who continue using marijuana for several years or more are not necessarily "addicted" to it. Many regular users -- including many daily users -- consume marijuana in a way that does not interfere with other life activities, and may in some cases enhance them.

There is only scant evidence that marijuana produces physical dependence and withdrawal in humans.

> When human subjects were administered daily oral doses of 180-210 mg of THC -- the equivalent of 15-20 joints per day -- abrupt cessation produced adverse symptoms, including disturbed sleep, restlessness, nausea, decreased appetite, and sweating. The authors interpreted these symptoms as evidence of physical dependence. However, they noted the syndrome's relatively mild nature and remained skeptical of its occurrence when marijuana is consumed in usual doses and situations.[61] Indeed, when humans are allowed to control consumption, even high doses are not followed by adverse withdrawal symptoms.[62]

Signs of withdrawal have been created in laboratory animals following the administration of very high doses.[63] Recently, at a NIDA-sponsored conference, a researcher described unpublished observations involving rats pretreated with THC and then dosed with a cannabinoid receptor-blocker.[64] Not surprisingly, this provoked sudden withdrawal, by stripping receptors of the drug. This finding has no relevance to human users who, upon ceasing use, experience a very gradual removal of THC from receptors.

The most avid publicizers of marijuana's addictive nature are treatment providers who, in recent years, have increasingly admitted insured marijuana users to their programs.[65] The increasing use of drug-detection technologies in the workplace, schools and elsewhere has also produced a group of marijuana users who identify themselves as "addicts" in order to receive treatment instead of punishment.[66]

CLAIM #10: MARIJUANA-RELATED MEDICAL EMERGENCIES ARE INCREASING

As evidence of its harmful effects, prohibition advocates point to dramatic increases in emergency room episodes related to marijuana ingestion.

THE FACTS

Data gathered by the Drug Abuse Warning Network (DAWN) show a recent increase in "marijuana mentions" by people seeking treatment in hospital emergency rooms. Using a one-page form, emergency-room personnel record "drug abuse episodes," note the presence or absence of alcohol as a contributing factor, and list up to four other drugs recently consumed by the patient.

> Although DAWN began compiling data in the 1970s, recent changes in recording procedures, the hospital selection, and methods of statistical estimation prevent comparisons of data gathered prior to 1988 with those gathered recently. Thus, discussion of emergency-room trends is limited to the years 1988 to 1993.[6]

The lowest number of marijuana-mentions, recorded in 1990, was 15,706 (7.1 mentions per 100,000 population). The highest was 29,166 (12.7 per 100,000 population), recorded in 1993.

> Using these figures, an increase of 86% has been reported. However, if 1988 is used as the "base year" instead -- a year in which there were 19,962 marijuana mentions -- the increase is reduced immediately by more than half, to 42%.

Despite marijuana being the most frequently used illicit drug, in emergency rooms, it remains the least often mentioned illicit drug.

> In 1993, marijuana accounted for 6.25% of mentions, compared to 15.3% for cocaine and 9.8% for heroin. Even over-the-counter pain medications were mentioned more often than marijuana -- comprising 9% of the total.

> For youth aged six to 17, there were more mentions of marijuana than of heroin and cocaine -- not because marijuana is more harmful to them but because these latter drugs are used so infrequently by young people. In this age group, mentions of over-the-counter pain medications were substantially higher than those for marijuana. While marijuana accounted for 6.48% of drug mentions by youth, over-the-counter pain medications accounted for 47%.

For the total population, not only is marijuana mentioned less frequently than other recreational drugs, it is seldom mentioned alone. In 1992, in more than 80% of the drug-abuse episodes involving marijunana, at least one other drug was mentioned; and, in more than 40%, two or more additional drugs were mentioned.

> Of 24,000 marijuana mentions in 1992, more than 13,000 involved alcohol and nearly 10,000 involved cocaine.

Despite recent increases in marijuana mentions, hospital emergency rooms are not flooded with marijuana users seeking medical attention. In 1992, of 433,493 total drug mentions, only 4,464 -- about 1% -- involved the use of marijuana alone.

CLAIM #11: MARIJUANA PRODUCES AN AMOTIVATIONAL SYNDROME

Marijuana is said to have a deliterious effect on society by making users passive, apathetic, unproductive, and unable or unwilling to fulfill their responsibilities.

THE FACTS

The concept of an amotivational syndrome first appeared in the late 1960s,[68] as marijuana use was increasing among American youth. In the years since, despite the absence of an agreed-upon definition of the concept, numerous researchers have attempted to verify its occurrence.

> Large-scale studies of high school students have generally found no difference in grade-point averages between marijuana users and non-users.[69] One study found lower grades among students reported to be daily users of marijuana, but the authors failed to identify a causal relationship and concluded that both phenomena were part of a complex of inter-related social and emotional problems.[70]

> In one longitudinal study of college students, after controlling for other factors, marijuana users were found to have higher grades than non-users![71] and to be equally as likely to successfully complete their educations.[72] Another study found that marijuana users in college scored higher than non-users on standardized "achievement values" scales.[73]

Field studies conducted in Jamaica, Costa Rica and Greece also found no evidence of an amotivational syndrome among marijuana-using populations.

> In these samples of working-class males, the educational and employment records of marijuana users were, for the most part, similar to those of non-users. In fact, in Jamaica, marijuana was often smoked during working hours as an aid to productivity.

The results of laboratory studies have been nearly as consistent.

> In one study lasting 94 days, marijuana had no significant impact on learning, performance or motivation.[74]

> In another 31-day study, subjects given marijuana worked more hours than controls and turned in an equal number of tokens for cash at the study's completion.[75]

> However, in a Canadian study that required subjects in the marijuana group to consume unusually high doses, some reduction in work efficency was noted in the days following intoxication.[76]

Undoubtedly, when marijuana is used in a way that produces near-constant intoxication, other activities and responsibilities are likely to be neglected.

However, the weight of scientific evidence suggests that there is nothing in the pharmacological properties of cannabis that alter people's attitudes, values, or abilities regarding work.

CLAIM #12: MARIJUANA IS A MAJOR CAUSE OF HIGHWAY ACCIDENTS

The detrimental impact of alcohol on highway safety has been well documented. Marijuana's opponents claim that it, too, causes significant impairment and that any increase in use will lead to increased highway accidents and fatalities.

THE FACTS

In high doses, marijuana probably produces driving impairment in most people. However, there is no evidence that marijuana, in current consumption patterns, contributes substantially to the rate of vehicular accidents in America.

A number of studies have looked for evidence of drugs in the blood or urine of drivers involved in fatal crashes. All have found alcohol present in 50% or more. Marijuana has been found much less often. Furthermore, in the majority of cases where marijuana has been detected, alcohol has been detected as well.[77]

> For example, a recent study sponsored by the U.S. National Highway Traffic Safety Administration (NHTSA) involving analysis of nearly 2000 fatal accident cases, found 6.7 % of drivers positive for marijuana. In more than two-thirds of those, alcohol was present and may have been the primary contributor to the fatal outcome.[78]

To accurately assess marijuana's contribution to fatal crashes, the positive rate among deceased drivers would have to be compared to the positive rate from a random sample of drivers not involved in fatal accidents. Since the rate of past-month marijuana use for Americans above the legal driving age is about 12 percent, on any given day a substantial proportion of all drivers would test positive, particulary since marijuana's metabolites remain in blood and urine long after its psychoactive effects are finished.

> A recent study found that one-third of those stopped for "bad driving" between the hours of 7 p.m. and 2 a.m. -- mostly young males -- tested positive for marijuana only.[79] To be meaningful, these test results would have to be compared to those from a matched control group of drivers.

A number of driving simulator studies have shown that marijuana does not produce the kind of psycho-motor impairment evident with modest doses of alcohol.[80] In fact, in a recent NHTSA study, the only statistically significant outcome associated with marijuana was that drivers drove more slowly.[81]

A recent study of actual driving ability under the influence of cannabis -- employing the same protocol used to test the impairment-potential of medicinal drugs -- evaluated the impact of placebo and three active THC doses in three driving trials, including one in high-density urban traffic.

> Dose-related impairment was observed in drivers' ability to maintain steady lateral position. However, even with the highest dose of THC, impairment was relatively minor -- comparable to that with blood-alcohol concentrations of between .03 and .07 % and many legal medications. Drivers under the influence of marijuana also tended to decrease their speed and approach other cars more cautiously.

While recognizing some limitations of this study, the authors conclude that "THC is not a profoundly impairing drug."[82]

CLAIM #13: MARIJUANA IS A "GATEWAY" TO THE USE OF OTHER DRUGS

Advocates of marijuana prohibition claim that even if marijuana itself causes minimal harm, it is a dangerous substance because it leads to the use of "harder drugs" such as heroin, LSD, and cocaine.

THE FACTS

Most users of heroin, LSD and cocaine have used marijuana. However, most marijuana users never use another illegal drug.

Over time, there has been no consistent relationship between the use patterns of various drugs.[83]

As marijuana use increased in the 1960s and 1970s, heroin use declined. And, when marijuana use declined in the 1980s, heroin use remained fairly stable.

For the past 20 years, as marijuana use-rates fluctuated, the use of LSD hardly changed at all.

Cocaine use increased in the early 1980s as marijuana use was declining. During the late 1980s, both marijuana and cocaine declined. During the last few years, cocaine use has continued to decline as marijuana use has increased slightly.

In 1994, less than 16 % of high school seniors who had ever tried marijuana had ever tried cocaine -- the lowest percentage ever recorded. In fact, as shown below, the proportion of marijuana users trying cocaine has declined steadily since 1986, when a high of more than 33 % was recorded

Proportion of Marijuana Users Ever Trying Cocaine
High School Seniors, 1975-1994[84]

In short, there is no inevitable relationship between the use of marijuana and other drugs. This fact is supported by data from other countries. In the Netherlands, for example, although marijuana prevalence among young people increased during the past decade, cocaine use decreased -- and remains considerably lower than in the United States. Whereas approximately 16 % of youthful marijuana users in the U.S. have tried cocaine, the comparable figure for Dutch youth is 1.8 percent.[85] Indeed, the Dutch policy of allowing marijuana to be purchased openly in government-regulated "coffee shops" was designed specifically to separate young marijuana users from illegal markets where heroin and cocaine are sold.[86]

CLAIM #14: DUTCH MARIJUANA POLICY HAS BEEN A FAILURE

While American critics of marijuana prohibition often point to the Netherlands as a model for an alternative policy, prohibition's supporters claim that country's permissiveness has had disastrous consequences, including escalating rates of drug use among youth.

THE FACTS

In 1976, following the recommendations of two national commissions, the Dutch government revised many aspects of its drug policy. While not legalizing marijuana, it adopted an "expediency principle," which directed police and prosecutors to ignore retail sale to adults as long as the circumstances of the sale do not constitute a public nuisance.

This change in policy was based on several factors, including:

-- a principle of tolerance toward alternative lifestyles -
-- a finding that, compared to other illegal drugs, marijuana poses little risk to users
-- a desire to protect marijuana users from the marginalization that accompanies arrest and prosecution
-- a belief that separating the retail markets for "soft" and "hard" drugs decreases the likelihood that marijuana users will experiment with cocaine or heroin

Following the policy change, marijuana sales emerged openly in coffee shops, which were required to follow a set of regulations, including a ban on advertising, sale of no more than 30 grams at a time, and a minimum purchase age of 18. The sale of other drugs on the premises is strictly prohibited, and constitutes grounds for immediate closure by the police. Local officials were also authorized to create additional regulations to protect the interests of the community -- for example, limiting the number of coffee shops concentrated in any one area.[87]

Since liberalization, marijuana use has increased in the Netherlands, although rates remain similar to those in neighboring European countries, and are generally lower than those in the United States.

MARIJUANA USE AMONG DUTCH YOUTH (ages 12-18)[88]			**MARIJUANA USE AMONG AMERICAN YOUTH** (ages 12-17)[89]			**MARIJUANA USE AMONG AMERICAN YOUTH** (high school seniors)[90]		
	ever used	past month		ever used	past month		ever used	past month
1984	4.8%	2.3%	1985	23.6%	12.0%	1985	54.2%	25.7%
1988	8.0	3.1	1988	17.4	6.4	1988	47.2	18.0
1992	13.5	6.5	1993	11.7	4.9	1993	35.3	15.5

While marijuana use-rates have increased in the Netherlands, cocaine use-rates have not -- indicating that separation of the "hard" and "soft" drug markets has prevented a "gateway effect" from developing. In 1992, about 1.5% of 12 to 18 year-olds had ever tried cocaine and only .3% had used it in the past month.[91]

Although there are some Dutch critics of that country's liberalized marijuana policy, the government's official position remains steadfastly supportive of the 1976 initiative that decriminalized possession and retail [92]

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THE LANCET

Volume 346, Number 8985

EDITORIAL

Deglamorising cannabis

The smoking of cannabis, even long term, is not harmful to health. Yet this widely used substance is illegal just about everywhere. There have been numerous calls over the years for the legalisation, or at least decriminalisation, of soft drugs, among which cannabis remains the most popular with all social groups. In this highly contentious area, the Dutch attitude has often been mentioned as the voice of sanity. In the Netherlands, customers of coffee shops can buy up to 30 g of cannabis for about £10 ($15) although the drug is technically illegal. The shops are not allowed to advertise, or to sell cannabis to individuals aged under 16 years.

Prominent among those currently calling for legislative reform—and going further by making constructive proposals—are police chiefs and city medical officers, people who know only too well that the existing policies in most countries are ineffective and unworkable. Meanwhile, politicians have largely remained silent, seemingly afraid of offending powerful segments of the electorate or merely of being perceived as weak in the face of rising crime figures. When the occasional politician raises her head above the parapet—as the British opposition MP Clare Short did recently in calling for a fresh debate on decriminalisation of cannabis—the response is tediously predictable: widespread condemnation from political colleagues and overwhelming support from those who have to cope with the end result of political inertia.

In the case of Ms Short, not only was she speedily reprimanded by the party leader, but also party officials claimed that their non-legalisation stance was entirely logical since legalisation of cannabis would "increase the supply, reduce the price, and increase the usage". According to a Home Office report earlier this year, the number of people taking cannabis had doubled in a decade—without any help from "liberal" measures. Perhaps the politicians' real fear was that freedom to use soft drugs would automatically progress to increased use of substances such as cocaine and heroin. If so, they must have overlooked the recent Dutch government review which pointed out that decriminalisation of possession of soft drugs had not led to a rise in the use of hard drugs.

If the Dutch approach is so successful, why are changes afoot in The Hague to tighten up that country's drug policy? First Amsterdam's mayor proposed closing down half the city's coffee shops that sell cannabis, and in so doing he rejected a report by his health department in favour of legalisation of soft drugs. Then the Dutch government, which had made an election promise to legalise cannabis, last month issued a discussion paper which mirrored the Amsterdam plan. If, as expected, the Dutch parliament agrees the latest proposals, half the country's 4000 cannabis-selling coffee shops will close and the amount that can be sold to an individual will be cut to 5 g. Since the government's own review provides no ammunition for such a change in policy, the real reason behind the new measures must lie elsewhere. One need look no further than the Netherlands' neighbours and co-signatories of the Schengen agreement, which introduced a border-free zone between the Netherlands, France, Germany, Spain, Luxembourg, and Belgium. When France, in particular, threatened to end the agreement, claiming that the Netherlands was the major supplier of Europe's drugs, some action had to be taken and the coffee shops became the scapegoat.

Leaving politics aside, where is the harm in decriminalising cannabis? There is none to the health of consumers, and the criminal fraternity who depend for their succour on prohibition would hate it. But decriminalisation of possession does not go far enough in our view. That has to be accompanied by controls on source, distribution, and advertising, much as happens with tobacco. A system, in fact, remarkably close to the existing one in Dutch coffee shops.

Cannabis has become a political football, and one that governments continually duck. Like footballs, however, it bounces back. Sooner or later politicians will have to stop running scared and address the evidence: cannabis per se is not a hazard to society but driving it further underground may well be.

The Lancet

Commentary

Marihuana as Medicine

A Plea for Reconsideration

BETWEEN 1840 and 1900, European and American medical journals published more than 100 articles on the therapeutic use of the drug known then as *Cannabis indica* (or Indian hemp) and now as marihuana. It was recommended as an appetite stimulant, muscle relaxant, analgesic, hypnotic, and anticonvulsant. As late as 1913 Sir William Osler recommended it as the most satisfactory remedy for migraine.

Today the 5000-year medical history of cannabis has been almost forgotten. Its use declined in the early 20th century because the potency of preparations was variable, responses to oral ingestion were erratic, and alternatives became available—injectable opiates and, later, synthetic drugs such as aspirin and barbiturates. In the United States, the final blow was struck by the Marihuana Tax Act of 1937. Designed to prevent nonmedical use, this law made cannabis so difficult to obtain for medical purposes that it was removed from the pharmacopeia. It is now confined to Schedule I under the Controlled Substances Act as a drug that has a high potential for abuse, lacks an accepted medical use, and is unsafe for use under medical supervision.

In 1972 the National Organization for the Reform of Marijuana Laws petitioned the Bureau of Narcotics and Dangerous Drugs, later renamed the Drug Enforcement Administration (DEA), to transfer marihuana to Schedule II so that it could be legally prescribed. As the proceedings continued, other parties joined, including the Physicians Association for AIDS [acquired immunodeficiency syndrome] Care. It was only in 1986, after many years of legal maneuvering, that the DEA acceded to the demand for the public hearings required by law. During the hearings, which lasted 2 years, many patients and physicians testified and thousands of pages of documentation were introduced. In 1988 the DEA's own administrative law judge, Francis L. Young, declared that marihuana in its natural form fulfilled the legal requirement of currently accepted medical use in treatment in the United States. He added that it was "one of the safest therapeutically active substances known to man."[1] His order that the marihuana plant be transferred to Schedule II was overruled, not by any medical authority, but by the DEA itself, which issued a final rejection of all pleas for reclassification in March 1992.

Meanwhile, a few patients have been able to obtain marihuana legally for therapeutic purposes. Since 1978, legislation permitting patients with certain disorders to use marihuana with a physician's approval has been enacted in 36 states. Although federal regulations and procedures made the laws difficult to implement, 10 states eventually established formal marihuana research programs to seek Food and Drug Administration (FDA) approval for Investigational New Drug (IND) applications. These programs were later abandoned, mainly because the bureaucratic burden on physicians and patients became intolerable.

Growing demand also forced the FDA to institute an Individual Treatment IND (commonly referred to as a Compassionate IND) for the use of physicians whose patients needed marihuana because no other drug would produce the same therapeutic effect. The application process was made enormously complicated, and most physicians did not want to become involved, especially since many believed there was some stigma attached to prescribing cannabis. Between 1976 and 1988 the government reluctantly awarded about a half dozen Compassionate INDs for the use of marihuana. In 1989 the FDA was deluged with new applications from people with AIDS, and the number granted rose to 34 within a year. In June 1991, the Public Health Service announced that the program would be suspended because it undercut the administration's opposition to the use of illegal drugs. After that no new Compassionate INDs were granted, and the program was discontinued in March 1992. Eight patients are still receiving marihuana under the original program; for everyone else it is officially a forbidden medicine.

And yet physicians and patients in increasing numbers continue to relearn through personal experience the lessons of the 19th century. Many people know that marihuana is now being used illegally for the nausea and vomiting induced by chemotherapy. Some know that it lowers intraocular pressure in glaucoma. Patients have found it useful as an anticonvulsant, as a muscle relaxant in spastic disorders, and as an appetite stimulant in the wasting syndrome of human immunodeficiency virus infection. It is also being used to relieve phantom limb pain, menstrual cramps, and other types of chronic pain, including (as Osler might have predicted) migraine.[2] Polls and voter referenda have repeatedly indicated that the vast majority of Americans think marihuana should be medically available.

One of marihuana's greatest advantages as a medicine is its remarkable safety. It has little effect on major physiological functions. There is no known case of a lethal overdose; on the basis of animal models, the ratio of lethal to effective dose is estimated as 40 000 to 1. By comparison, the ratio is between 3 and 50 to 1 for secobarbital and between 4 and 10 to 1 for ethanol. Marihuana is also far less addictive and far less subject to abuse than many drugs now used as muscle re-

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laxants, hypnotics, and analgesics. The chief legitimate concern is the effect of smoking on the lungs. Cannabis smoke carries even more tars and other particulate matter than tobacco smoke. But the amount smoked is much less, especially in medical use, and once marihuana is an openly recognized medicine, solutions may be found. Water pipes are a partial answer; ultimately a technology for the inhalation of cannabinoid vapors could be developed. Even if smoking continued, legal availability would make it easier to take precautions against aspergilli and other pathogens. At present, the greatest danger in medical use of marihuana is its illegality, which imposes much anxiety and expense on suffering people, forces them to bargain with illicit drug dealers, and exposes them to the threat of criminal prosecution.

The main active substance in cannabis, Δ^9-tetrahydrocannabinol (Δ^9-THC), has been available for limited purposes as a Schedule II synthetic drug since 1985. This medicine, dronabinol (Marinol), taken orally in capsule form, is sometimes said to obviate the need for medical marihuana. Patients and physicians who have tried both disagree. The dosage and duration of action of marihuana are easier to control, and other cannabinoids in the marihuana plant may modify the action of Δ^9-THC. The development of cannabinoids in pure form should certainly be encouraged, but the time and resources required are great and at present unavailable. In these circumstances, further isolation, testing, and development of individual cannabinoids should not be considered a substitute for meeting the immediate needs of suffering people.

Although it is often objected that the medical usefulness of marihuana has not been demonstrated by controlled studies, several informal experiments involving large numbers of subjects suggest an advantage for marihuana over oral Δ^9-THC and other medicines. For example, from 1978 through 1986 the state research program in New Mexico provided marihuana or synthetic Δ^9-THC to about 250 cancer patients receiving chemotherapy after conventional medications failed to control their nausea and vomiting. A physician who worked with the program testified at a DEA hearing that for these patients marihuana was clearly superior to both chlorpromazine and synthetic Δ^9-THC.[1] It is true that we do not have studies controlled according to the standards required by the FDA—chiefly because legal, bureaucratic, and financial obstacles are constantly put in the way. The situation is ironical, since so much research has been done on marihuana, often in unsuccessful attempts to prove its dangerous and addictive character, that we know more about it than about most prescription drugs.

Physicians should offer more encouragement to controlled research, but it too has limitations. Individual therapeutic responses can be obscured by the statistical results of group experiments in which there is little effort to identify the specific features of a patient that affect the drug response. Furthermore, much of our knowledge of synthetic medicines as well as plant derivatives comes from anecdotal evidence. For example, as early as 1976 several small, methodologically imperfect, and relatively obscure studies had shown that taking an aspirin a day could prevent a second heart attack. In 1988 a large-scale experiment demonstrated dramatic effects. This story is suggestive, because marihuana, like aspirin, is a substance known to be unusually safe and to have enormous potential health benefits.

Cannabis can also bring about immediate relief of suffering measurable in a study with only one subject. In the experimental method known as the single-patient randomized trial, active and placebo treatments are administered randomly in alternation or succession to a patient. The method is often useful when large-scale controlled studies are impossible or inappropriate because the disorder is rare, the patient is atypical, or the response to the treatment is idiosyncratic. Many patients, either deliberately or because of unreliable supplies, have informally carried out somewhat similar experiments by alternating periods of cannabis use with periods of no use in the treatment of various disorders.[2(pp133-136)]

The American Medical Association was one of the few organizations that raised a voice in opposition to the Marihuana Tax Act of 1937, yet today most physicians seem to take little active interest in the subject, and their silence is often cited by those who are determined that marihuana shall remain a forbidden medicine. Meanwhile, many physicians pretend to ignore the fact that their patients with cancer, AIDS, or multiple sclerosis are smoking marihuana for relief; some quietly encourage them. In a 1990 survey, 44% of oncologists said they had suggested that a patient smoke marihuana for relief of the nausea induced by chemotherapy.[4] If marihuana were actually unsafe for use even under medical supervision, as its Schedule I status explicitly affirms, this recommendation would be unthinkable. It is time for physicians to acknowledge more openly that the present classification is scientifically, legally, and morally wrong.

Physicians have both a right and a duty to be skeptical about therapeutic claims for any substance, but only after putting aside fears and doubts connected with the stigma of illicit nonmedical drug use. Advocates of medical use of marihuana are sometimes charged with using medicine as a wedge to open a way for "recreational" use. The accusation is false as applied to its target, but expresses in a distorted form a truth about some opponents of medical marihuana: they will not admit that it can be a safe and effective medicine largely because they are stubbornly committed to exaggerating its dangers when used for nonmedical purposes.

We are not asking readers for immediate agreement with our affirmation that marihuana is medically useful, but we hope they will do more to encourage open and legal exploration of its potential. The ostensible indifference of physicians should no longer be used as a justification for keeping this medicine in the shadows.

Lester Grinspoon, MD
James B. Bakalar, JD

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TO: Interested Persons

FROM: Loren Siegel DATE: November 9, 1995

RE: American Voters' Opinions on the Use and Legalization of Marijuana for Medical Purposes

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In January 1995, the American Civil Liberties Union embarked on study of the voting public's views about marijuana policy. The ACLU hired Belden & Russonello (B&R), a Washington, D.C.-based research and polling firm, and Doug Gould, a communications strategies consultant, to conduct the study.

In brief, B&R conducted four pre-survey focus groups in Dayton, Ohio (2) on February 16, 1995, and in Baltimore, Maryland (2) on February 28, 1995. The focus groups were followed by a national random digit dial survey by telephone, from March 31 through April 5, 1995, among 1,001 registered voters. The sample was designed to represent all households in the nation, and the margin of sampling error for a sample of 1,001 is plus or minus 3.1 percentage points.

The findings that emerged from this work clearly demonstrate that a very substantial majority of the voting public supports a change in marijuana policy with respect to its medical uses. The key findings were as follows:

1. Legalization of marijuana for medical use is favored by a clear majority of American voters.

A very substantial majority of respondents (93%) has heard that marijuana had medical uses. Twenty-two percent know someone who has used marijuana for medicinal reasons. A series of questions were posed to test the public's views on legalizing marijuana for medical purposes:

Q. Do you think it would be a good idea or a bad idea to legalize marijuana to relieve pain and for other medical uses if prescribed by a doctor?

VERY GOOD.....47%
SOMEWHAT GOOD.....32
SOMEWHAT BAD.....4
VERY BAD.....12

Nadine Strossen President ... Kenneth B. Clark Civil Liberties Advisory Council ... Richard Zacks Treasurer

Q. Thinking about medical uses of marijuana, would you favor or oppose making marijuana legally available for medical uses where it has been proven effective for treating a problem?	STRONGLY FAVOR.....64% SOMEWHAT.....21 SOMEWHAT OPPOSE.....4 STRONGLY OPPOSE.....9
Q. Conclusive tests on the possible medical uses of marijuana have not been completed. Would you favor or oppose making marijuana legally available for medical uses, even though testing has not been complete?	STRONGLY FAVOR.....31% SOMEWHAT FAVOR.....24 SOMEWHAT OPPOSE.....15 STRONGLY OPPOSE.....27
Q. People who find that marijuana is effective for their medical needs, like treating glaucoma and relieving nausea from chemotherapy, should be able to use it legally.	STRONGLY AGREE.....60% SMWHT AGREE.....23 SMWHT DISAGREE.....5 STRONGLY DISAGREE.....8

2. Fewer than half the respondents thought the argument most often posed by opponents of medical marijuana was convincing, i.e. that legalizing marijuana for medical purposes would lead to more social use, and the largest group thought it was "very unconvincing":

Q. Is the following argument very convincing, somewhat convincing, somewhat unconvincing or very unconvincing as a reason for keeping marijuana illegal·

	Very Conv	Smwht Conv	Smwht Unconv	Very Unconv
▸ Legalizing marijuana for medical uses will make it too easy for other people to get it and abuse it.	25%	22	19	32

9513: Access to Therapeutic Marijuana/Cannabis

The American Public Health Association,

Being aware that cannabis/marijuana has been used medicinally for centuries and that cannabis products were widely prescribed by physicians in the United States until 1937;[1,2] and

Being aware that "marijuana" prohibition began with the Marijuana Tax Act of 1937 under false claims despite disagreeing testimony from the AMA's representative; [3,4] and

Being further aware that the Controlled Substances Act of 1970 completely prohibited all medicinal use of marijuana by placing it in the most restrictive category of Schedule I, whereby drugs must meet three criteria for placement in this category: 1) have no therapeutic value, 2) are not safe for medical use, and 3) have a high abuse potential; [5] and

Being cognizant that the Drug Enforcement Administration's own administrative law judge ruled in 1988 that marijuana must be removed from Schedule I and made available for physicians to prescribe; [6–8] and

Knowing that 36 states have passed legislation recognizing marijuana's therapeutic value; [9,10] and

Also knowing that the only available access to legal marijuana which was through the Food and Drug Administration's Investigational New Drug Program has been closed by the Secretary of Health and Human Services since 1992; [11] and

Understanding that while synthetic Tetrahydrocannibinol (THC) is available in pill form, it is only one of approximately 60 cannabinoids which may have medicinal value individually or in some combination; and

Understanding that marijuana has an extremely wide acute margin of safety for use under medical supervision and cannot cause lethal reactions; [6,32,34] and

Understanding that marijuana has been reported to be effective in: a) reducing intraocular pressure in glaucoma;[12,13] b) reducing nausea and vomiting associated with chemotherapy; [14–16] c) stimulating the appetite for patients living with AIDS (acquired immunodeficiency syndrome) and suffering from the wasting syndrome; [17–19] d) controlling spasticity associated with spinal cord injury and multiple sclerosis; [20–25] e) decreasing the suffering from chronic pain; [26–28] and f) controlling seizures associated with seizure disorders; [29–31] and

Understanding that marijuana seems to work differently than many conventional medications for the above problems, making it a possible option for persons resistant to the conventional medications;[32,33] and

Being concerned that desperate patients and their families are choosing to break the law to obtain this medicine when conventional medicines or treatments have not been effective for them or are too toxic; [34,35] and

Realizing that this places ill persons at risk for criminal charges and at risk for obtaining contaminated medicine because of the lack of quality control; and

Realizing that thousands of patients not helped by conventional medications and treatments, may find relief from their suffering with the use of marijuana if their primary care providers were able to prescribe this medicine; and

Concluding that cannabis/marijuana was wrongfully placed in Schedule I of the Controlled Substances depriving patients of its therapeutic potential;

Recognizing that APHA adopted a resolution (7014) on Marijuana and the Law which urged federal and state drugs laws to exclude marijuana from classification as a narcotic drug;[36] and

Concluding that greater harm is caused by the legal consequences of its prohibition than possible risks of medicinal use; therefore

1. Encourages research of the therapeutic properties of various cannabinoids and combinations of cannabinoids; and

2. Encourages research on alternative methods of administration to decrease the harmful effects related to smoking; and

3. Urges the Administration and Congress to move expeditiously to make cannabis available as a legal medicine where shown to be safe and effective and to immediately allow access to therapeutic cannibis through the Investigational New Drug Program.

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MEDICAL USE OF WHOLE CANNABIS:

Statement of the Federation of American Scientists

SUMMARY

The federal government, particularly through the Drug Enforcement Administration, has strongly resisted research on therapeutic uses of whole cannabis, though there is good prima facie evidence that it might make valuable contributions to the treatment of a variety of significant problems. Moreover, despite its illegality, whole cannabis is in clinical use; thus even negative results would have practical use. The federal government should remove legal barriers to research, provide direct or indirect financial support for such research and, in the meantime, allow continued and expanded use of the drug under a compassionate research program for patients who doctors prescribe whole marijuana.

BACKGROUND

While a synthetic version of delta-9 tetrahyrocannabinol (THC), the main psychoactive agent in Cannabis (marijuana), is legally available in be United States for medical use, the plant material itself, and all of its other active agents, remain forbidden[1]. Even the Compassionate Investigational New Drug program, under which a handful of patients receive government-produced whole cannabis for the treatment of various conditions, has been closed to new applicants[2].

Anecdotal accounts testify to the potential value of whole cannabis in a wide range of conditions, including appetite enhancement for the wasting syndrome of AIDS, control of nausea and vomiting associated with cancer chemotherapy, relief of spasticity and pain associated with multiple sclerosis, and control of migraine headaches and epileptic seizures[3]. A substantial proportion of practicing oncologists regard cannabis as a safe and effective anti-nausea agent[4].

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[1] In June 1985, FDA approved the synthetic drug for marketing under the chemical name dronabinol, and the trade name Marinol. In April 1986, DEA rescheduled synthetic THC to Schedule 2.

[2] The program was closed to new applicants during the Bush Administration by Assistant Secretary of Health James Madison. Dr. Philip Lee, the current Assistant of Health, reviewed the decision by his predecessor and in July, 1994 decided to keep the Compassionate program closed on that grounds that the program "is not the type of clinical trial that would produce useful scientific information." Letter from Dr. Lee to Rep. Barney Frank.

[3] Grinspoon, D L and Bakalar, J. *Marijuana, The Forbidden Medicine, Yale University Press. New Haven, CT. 1993*

[4] Doblin R, Kleiman MAR. Marijuana as antiemetic medicine; A survey of oncologists' experiences and attitudes. *J Clin Oncol. 1991;9:1314-1319.*

If indeed whole smoked cannabis has greater efficacy or lesser side effects than oral delta-9 THC for some patients or conditions -- ope careful, though non-randomized, clinical study with chemotherapy patients has shown greater efficacy[5] -- that might be due either to the advantages of inhaled over oral administration (speed of action plus more reliable bioavailability[6]) and the consequent ability of patients to self-titrate dosage) or to the action of one or more of the dozens of active agents in whole cannabis, or their interactions with each other and with delta-9 THC. One study with healthy volunteers showed that a combination of THC with cannabidiol, another chemical in whole cannabis, tends to be less anxiety-provoking than THC alone[7].

Despite its illegality, whole cannabis is in clinical use. In a survey of practicing oncologists, more than four in ten reported having recommended the material for use by one or more patients[8]. A substantial number of AIDS patients reportedly use whole cannabis, either smoked or orally, as an appetite enhancer, and some of the "buyers' clubs" which legally acquire non-FDA-approved medicines for such patients apparently are now handling illegal cannabis as well[9]. Even at black-market prices, whole cannabis is substantially less expensive per bioavailable milligram of THC than is the legal synthetic, sold under the trade-name Marinol.

An unknown number of persons growing cannabis for their own medical use or distributing it for medical use by others have been arrested, prosecuted, and had homes and other assets seized and forfeited to the government. In a few well-publicized cases, charges of marijuana production or distribution have been dropped or convictions overturned based on the defense of "medical necessity," at least one such defendant has subsequently been re-arrested[10].

The absurd and obscene spectacle of physicians sending patients to black-market drug dealers for medicine, and other producers and consumers of a therapeutic agent risking arrest, must end.

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[5] Vinciguerra V, Moore T, Brennen E. Inhalation marijuana as an antiemetic for chemotherapy. *NY State J Med*, 1988; 88:525-527.

[6] Ohlsson A, Lindgren JE, Wahlen A, et al. Plasma x-9-THC concentrations and clinical effects after oral and intravenous administration and smoking. *ClinPharmacol Ther. 1980;28:409-416.*

[7] Zuardi AW, Shirakawa E, Finkelharb E, Karniol IG. Action of cannabidiol on the anxiety and other effects produced by x9-THC in normal subjects. *Psychopharm* 1982;76:245-250.

[8] Doblin R, Kleiman MAR. Medical Use of Marijuana *Annals Int Med.* 1991;114:809-810.

[9] Simmers, Tim. Many Chronically Ill Find Relief in Marijuana Shop, *Oakland Tribune*, September 18, 1994. p.D1.

[10] Vallarie Corral is the person arrested twice. She is both a marijuana patient and a grower/distributor to other patients.

THE LEGAL AND REGULATORY SITUATION

Legally, there are two barriers to the medical use of whole cannabis. First, cannabis is a "controlled substance," which cannot be produced, distributed, or possessed except for approved medical or research purposes. Second, cannabis has not been approved by the Food and Drug Administration as a safe and effective treatment for any condition, which as a legal matter means that it cannot be produced by a drug company, distributed by a pharmacist, or prescribed by a physician.

In the ordinary course of things, when a new drug is developed there is a sponsoring company that is willing to spend the millions of dollars required to perform the research needed to secure New Drug Approval from the FDA, because the company's patent on the new compound will allow it to charge monopoly prices once it has been approved. But cannabis is not a new drug; its medical use is thousands of years old, and it was listed in the United States Pharmacopoeia until 1937. Therefore it lacks drug-company sponsorship. Moreover, the FDA process is biased towards refined or synthetic compounds and against herbal medicines, whose natural variability makes them more difficult subjects of research, independent of whether their actual clinical performance is better or worse than their refined or synthetic competitors.

These economic and regulatory facts are half of the explanation for the relative paucity of carefully controlled clinical studies.

THE POLITICAL SITUATION

The other explanation for the lack of research is that the struggle over the medical use of cannabis has been caught up in the larger battle over its legal availability for non-medical purposes. As a logical matter, there is no reason for the two issues to be confused. Cocaine and morphine are both legal medicines, and that does not seem to have confused anyone about their danger as drugs of abuse. Nor have legal cocaine or morphine supplies added in any significant measure to the illicit markets for cocaine or the opiates.

But, as a political matter, medical marijuana has been seen as a front-line battle in the war about the War on Drugs. Patients have been the collateral casualties of this misconceived battle. The most recent instance of this is the decision by a second-level official at the Drug Enforcement Administration, a lawyer without any research or medical credentials, to block the supply of cannabis for an FDA-approved study by a leading AIDS researcher on the use of whole cannabis in treating the wasting syndrome of AIDS, because some of the people supporting it have politically incorrect views on drug abuse control policy.

Putting the substance of the medical cannabis question aside, it is an outrage for a law enforcement official to interfere with medical research. Anyone curious about what becomes of a society where the government blocks any scientific research that might lead to politically inconvenient results could learn much by studying conditions in Leningrad or the German Democratic Republic.

NEXT STEPS

The most important thing the Federal government needs to do about medical cannabis is to get out of the way of research. A recent report by the Institute of Medicine recommended removing the power of the Drug Enforcement Administration over research with Schedule I (non-approved) drugs[11], and the story

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[11] *Development of Anti-Addiction Medications: Issues for the Government and Private Sector.* Committee to Study Medication Development and Research at the National Institute on Drug Abuse. Division of Biobehavioral Sciences and Mental Disorders. Institute of Medicine. 1994.

of the study of cannabis for the AIDS wasting syndrome strongly suggests that the suggestion was a wise one.

At the same time, funds need to be made available to get the necessary clinical studies done, either directly through the National Institutes of Health or indirectly by giving some firm or non-profit entity limited patent protection for cannabis under the Orphan Drug Development program.

As part of that funding process, either the NIH or the organization which assumes the sponsorship of medical cannabis research should set aside money to supply cannabis on a compassionate basis to patients whose physicians certify they need it, even before it receives formal approval. The compassionate IND program, as it was called, was canceled as it applied to marijuana partly for ideological reasons and partly because an upsurge of demand for cannabis from AIDS patients threatened to exhaust the NIDA research budget. That program should be restarted, but in a way that yields usable research results. A methodology that would accomplish this goal has been proposed by FDA.

But compassionate use, as urgent as it is to those currently suffering, is only a stop-gap. There is no substitute for clinical research that alone can make cannabis an approved medicine, available as other medicines are through ordinary pharmaceutical channels.

Prepared by Mark A.R. Kleiman
Chairman, FAS Committee on Drug Policy

National Drug Strategy

The health and psychological consequences of cannabis use

Monograph Series No. 25

Wayne Hall,
Nadia Solowij and
Jim Lemon,
National Drug and Alcohol Research Centre

Prepared for the National Task Force on Cannabis

Australian Government Publishing Service
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It is unfortunate that a connection has been forged between the debates about the legal status of cannabis as a recreational drug and the use of cannabinoids for therapeutic use. Any such connection is spurious, since there is a world of difference between the use of controlled doses of a purified drug under medical supervision and the recreational use of crude preparations of a drug. In a rational world, clinical decisions about whether to use pure cannabinoid drugs should not be abrogated because crude forms of the drug may be abused by those who use it recreationally. As a community we do not allow this type of thinking to deny us the use of opiates for analgesia. Nor should it be used to deny access to any therapeutic uses of cannabinoids derivatives that may be revealed by pharmacological research.

8.11 Conclusions

The following provisional conclusions can be drawn on the available evidence. First, there is good evidence for the therapeutic potential of THC as an anti-emetic agent. Although uncertainty exists about the most optimal method of dosing and the advantages and disadvantages of different routes of administration, there is sufficient evidence to justify it being made available in pure synthetic form to cancer patients. In the light of the recent development of more effective anti-emetic agents, it remains to be seen how widely used the cannabinoids will be. Second, there is reasonable evidence for the potential efficacy of THC in the treatment of glaucoma, especially in cases which have proved resistant to existing anti-glaucoma agents. Further research is clearly required, but this should not prevent its use under medical supervision in poorly controlled cases, provided patients make informed decisions about its use in the light of information about the possible health risks of long-term use. Third, there is sufficient suggestive evidence of the potential usefulness of various cannabinoids as analgesic, anti-asthmatic, anti-spasmodic, and anti-convulsant agents to warrant further basic pharmacological and experimental investigation, and perhaps clinical research into their effectiveness.

Despite the basic and clinical research work which was undertaken in late 1970s and early 1980s, the cannabinoids have not been widely used therapeutically, nor have further investigations been conducted along the lines suggested in the positive evaluations made by the Institute of Medicine (1982). This seems largely attributable to the fact that clinical research on the therapeutic use of cannabinoids has been discouraged by regulation and a lack of funding in the United States, where most cannabis research has been conducted. The discouragement of therapeutic research, in turn, derives from the fact that THC, the most therapeutically effective cannabinoid, has the psychoactive effects sought by recreational users. In opposing the therapeutic uses of cannabinoids, some researchers have used double standards in appraising efficacy and safety, setting unreasonably high standards in assessing the evidence on the comparative therapeutic safety and efficacy of cannabinoids and existing agents. The application of the same demanding standards to existing agents for the candidate diseases, and more generally, to existing psychoactive drugs that are widely used in medical practice, would denude the pharmacopoeia. The recent discovery of the cannabinoid receptor may help to overcome some of the resistance to research into the therapeutic uses of cannabinoids, by holding out the prospect that the psychoactive effects of the cannabinoids can be disengaged from their other therapeutically desirable effects.

Mr. MCCOLLUM. Thank you, Mr. Stroup.

Ms. Merritt, you'll be recognized next. I might add that all three of you, your full written text will be admitted into the record without objection. If you wish to summarize, you're certainly welcome to do so.

Ms. Merritt, would you please use the microphone that's there. You can bring it in front of you or put it anywhere it's comfortable for you.

STATEMENT OF JERALYN E. MERRITT, BOARD MEMBER, NATIONAL ASSOCIATION OF CRIMINAL DEFENSE LAWYERS

Ms. MERRITT. OK, I think it'll be fine.

Mr. Chairman, members of the committee, I'd like to take this opportunity to thank you for inviting me here on behalf of the National Association of Criminal Defense Lawyers to testify concerning the sentencing guidelines and the marijuana plant equivalency ratio.

Before I begin I would like to correct the record as to one thing. At the initiation of this hearing, Congressman Barr made reference to two groups who are here in a pro-drug situation, NORML and NACDL. The National Association of Criminal Defense Lawyers is not here today to advocate the legalization of marijuana or any other drugs. We were invited here specifically by Chairman McCollum to testify concerning the U.S. Sentencing Guidelines as they apply to marijuana plants. And that is the only issue that I do intend to address today.

And also he made reference to the fact that the NACDL and NORML were laughing at some of the proceedings. There are only two representatives of NACDL here today: Ms. Leslie Hagin, who is our legislative director, and me. And neither one of us were laughing at the proceedings here today.

Also, I'd like to point out that I have sat through the first panel today, I have listened to the witnesses, and as the mother of a teenaged son myself, I share their concerns about increased use of drugs by juveniles and I think it is an important topic. But, again, the issue that we are here for today relates to fairness and consistency in sentencing, and how the sentencing guidelines should be applied and should be formulated.

With that, I'd like to go into just a brief history of the U.S. Sentencing Guidelines, especially as it respects drug offenses. The U.S. Sentencing Guidelines came into effect on November 1, 1987. When the Sentencing Reform Act of 1984 was passed, it provided for the creation of a Sentencing Commission, to establish, by November 1, 1987, guidelines for all criminal offenses in the Federal system. In 1986, the Anti-Drug Abuse Act was passed. This was the act that created for the first time since prior to 1970 mandatory minimum penalties for drug offenses.

With respect to marijuana, these went into effect 1988. The law was amended, and at that time the Mandatory Minimum Sentencing Act provided that for offenses involving over 100 kilograms of marijuana a 5-year mandatory minimum penalty would apply. For offenses involving over 1,000 kilograms of marijuana, a 10-year mandatory minimum sentence would apply. It was for this reason

that the U.S. Sentencing Commission changed its sentencing guidelines.

When the sentencing guidelines first came into effect 1987, there were no mandatory minimum penalties for marijuana and there was no 1,000 or 100 grams. What it was, was that every plant was weighted at 100 grams per plant. That was the ratio in 1987; that is the correct ratio today, and that is the reason that the Sentencing Commission in 1995 went back to that sentencing ratio.

In 1989, to comport with the 1988 mandatory minimum statutes, the sentencing guidelines changed the ratio. And what it changed it to was that, in cases involving 49 or fewer plants, a 100-gram-per-plant ratio would be used. For offenses involving 50 or more plants, it would then be treated as each plant equalled 1 kilogram of marijuana. There are 1,000 grams in 1 kilogram of marijuana.

It appears there is little support for or reference to the 1988 or 1989 revised marijuana plant equivalency ratio of one plant to 1 kilogram in either the statute, the sentencing guideline, or even in the Congressional Record. I refer to a case in my paper that I submitted called *United States* v. *Marshall,* and the reason that I refer to that case is simply because it makes reference to the paucity of any information or evidence in the Congressional Record to support a finding that one marijuana plant is the equivalent, or will yield, 1 kilogram of marijuana.

The court in that case—and this case was overruled later on legal grounds—but what I am noting it for is solely what it referred to as to the Congressional Record, and that was one single statement by Senator Joseph Biden in which Senator Biden explained that the congressional action was designed to curtail unnecessary debate between prosecutors and defendants, and stated, without explanation, that the bill uses 1,000 plants as the equivalent of 1,000 kilograms. The court in that case also recognized that prior to that, and again in its 1991 edition, the U.S. Sentencing Commission recognized that the proper weight or the appropriate weight for one plant is 100 grams, not 1 kilogram.

Until the Commission submitted proposed amendment No. 8 to Sentencing Guideline 2D1.1[c] on May 1, 1995, which is the guideline that became effective on November 1, 1995, the sentencing guideline levels for marijuana plants remained illogically anchored to the mandatory minimum sentencing statutes. In other words, it remained that one plant was treated as 1 kilogram of marijuana, provided there were more than 49 plants. The reasons for the 1995 marijuana sentencing guideline amendment are valid. The most compelling argument for the amendment to the marijuana plant ratio is very simple: it is an accurate assessment of the average yield of a marijuana plant and it promotes truth in sentencing.

The prior ratio of one plant equals one kilogram of marijuana was inaccurate; it lacked any rational basis; it was divorced from reality; it was without foundational support, scientific or otherwise. In proposing the amendment, the Sentencing Commission stated its reason for doing do, and it stated, "To enhance fairness and consistency, this amendment adopts the equivalency of 100 grams per marijuana plant for guideline determinations." The Sentencing Commission considered several scientific studies and experts in arriving at the above conclusion.

Joseph Antognini of the Tropical Plant Research Section of the Department of Agriculture provided data establishing that a marijuana plant could be expected to yield between 37.5 and 151 grams of usable marijuana. James Urbanek at the University of Mississippi conducted Government-sponsored research involving the actual growing of marijuana plants. His scientifically-based estimate of dry, smokable material from an outdoor plant was between 295 and 412 grams. For an indoor plant, it decreased to 118 to 177 grams.

In fact, the U.S. Parole Commission's Rules and Procedures Manual used to use a ratio of one plant equals one quarter pound of useable marijuana. There are 4 ounces to a quarter pound; there are 28 grams to an ounce. That arrives at 112 grams, which is consistent with the Sentencing Commission's current determination that 100 grams per plant is the appropriate ratio. As is the case with all Parole Commission regulations, the regulation was published for public comment under the Administrative Procedure Act before it was enacted finally.

In addition, in 1990, Dr. Mahmoud ElSohly, who is a research professor and program coordinator of the Drug Abuse Research Program from the Research Institute of Pharmaceutical Sciences, School of Pharmacy, University of Mississippi, testified in Federal court in Georgia that the weight of evidence is that a marijuana plant does not equal 1 kilogram. He had never seen nor grown such a plant. His testimony was that a sentencing scheme of one plant equals 100 grams of marijuana is reasonable; a sentencing scheme where one plant equals 1 kilogram of marijuana is not.

I should mention that Dr. ElSohly has a Ph.D. in pharmacognosy and that he has published over 100 research papers, he has testified in more than 60 trials involving controlled substances, and he is the only person with a contract with the Government to grow marijuana.

The Drug Enforcement Administration utilized Dr. ElSohly's research in its 1992 publication entitled "Domestic Cannabis Eradication Suppression Program." In light of the evidence from scientific studies that the average yield of marijuana plants is 100 grams, not 1 kilogram of marijuana per plant, the kilogram per plant ratio is irrational, arbitrary, and unreasonable.

The Sentencing Commission further included the following as background commentary to its 1995 edition of the sentencing guidelines manual. It found that "the base offense levels in section 2D1.1 are either provided directly by the Anti-Drug Abuse Act of 1986, which is the one with the mandatory minimum penalties, or are proportional to the levels established by statute and apply to all unlawful trafficking. However, further refinement of drug amounts is essential to provide a logical sentencing structure for drug offenses. To determine these finer distinctions, the Commission consulted numerous experts and practitioners, including authorities at the Drug Enforcement Administration, chemists, attorneys, probation officers, and members of the Organized Crime Drug Enforcement Task Forces, who also advocate the necessity of these distinctions.

For marijuana plants, the Commission has adopted an equivalency ratio of 100 grams per plant or the actual weight of the plant

if the usable amount is greater than 100 grams. The decision to treat each plant as equal to 100 grams is premised on the fact that the average yield from a mature marijuana plant equals 100 grams of marijuana.

The Federal sentencing guidelines for drug offenses have been based on the quantity of the controlled substance at issue since their inception in 1987. These quantities must not be artificially manipulated to increase punishment for drug offenders. The sentencing guidelines currently in effect more than amply allow for increased terms of incarceration and punishment in appropriate cases, without resorting to irrational and inaccurate drug equivalency ratios.

For example, under 1B1.3, the relevant conduct guideline, the court can sentence someone for uncharged relevant conduct, in the case of a marijuana grow, for example, if the person was convicted of one marijuana grow. But if the court at sentencing, by a preponderance of the evidence was to find that the person had engaged in four prior grows, that person would be sentenced for the total amount of marijuana in all five grows, notwithstanding that only one grow was charged and he was only convicted of one grow.

Second, under 3B1.1, if the defendant were found to have a managerial or supervisory role in the offense, the court would be increasing his offense level by two points and he would be receiving a greater sentence.

If a dangerous weapon or firearm were used during the commission of the offense, a two-point increase would similarly go into effect. In addition, if the firearm was used during the commission of the offense, he could be charged with a violation under 18 U.S.C. 924(c), which would provide a 5-year mandatory consecutive sentence to the drug penalty.

In addition, there are similar increases in the guidelines for cases involving obstruction of justice, abuse of position of trust, or use of a special skill, using a minor to commit a crime, personal injury, or reckless endangerment during flight. There are also increases in the guidelines that are to be applied if the offense occurs near a protected location, such as a school, or involves a pregnant woman, or an underage person.

If the offender has an egregious prior record under the sentencing guideline 4A1.3, the court may depart upward to reflect that egregious prior history. If the defendant is on probation, parole, or under a criminal justice sentence at the time of the commission of this offense, additional criminal history points are added to that person's score, which would again increase the sentence.

There is simply no rational basis to use an invalid, outdated, and artificially-created yardstick when you are considering what to punish drug offenders for. Notwithstanding the perceived ills associated with marijuana cultivation, the infliction of more punishment upon individuals found guilty of marijuana cultivation than on those found guilty of marijuana distribution or importation, without scientific evidence, or in the absence of clear and rational congressional intent, results in an egregious and unjustifiable deprivation of constitutional due process rights as guaranteed by the fifth amendment to the U.S. Constitution.

In its enabling legislation to the U.S. Sentencing Commission, Congress specifically directed the Commission to periodically review and revise the sentencing guidelines in consideration of comments and data coming to its attention. The Commission is to accomplish its review and revision process by consultation with other individual and institutional representatives of various criminal justice agencies.

28 U.S.C. 994(p) directs the Sentencing Commission to submit proposed amendments to Congress on the first day of May of every calendar year, as well as to submit the reason for any proposed amendment. In 1995, the Sentencing Commission followed its congressional directive with respect to the equivalency ratio of marijuana plants used to determine the sentencing guideline levels for marijuana cultivation offenses. Congress agreed with this well-studied proposed amendment. For Congress to step in now and reverse that judgment, which has already become law, in the absence of new and compelling evidence that the amendment is scientifically unsound or otherwise irrational, flies in the face of the authority granted to the Sentencing Commission.

The amended marijuana equivalency ratio of 1 plant to 100 grams contained in U.S. Sentencing Guideline 2D1.1(c), effective November 1, 1995, is accurate, sound, valid, and supported by the clear weight of scientific evidence. It should not be disturbed by Congress.

[The prepared statement of Ms. Merritt follows:]

PREPARED STATEMENT OF JERALYN E. MERRITT, BOARD MEMBER, NATIONAL ASSOCIATION OF CRIMINAL DEFENSE LAWYERS

Mr. Chairman and members of the Committee, thank you for providing me with this opportunity to testify on behalf of the members of the National Association of Criminal Defense Lawyers (NACDL) in opposition to H.R. 2507 and in support of the 1995 amendment to United States Sentencing Guideline USSG 2D1.1 respecting marihuana plant equivalency ratios.

The almost 9,000 direct and almost 30,000 state and local affiliate members of the National Association of Criminal Defense Lawyers are private defense lawyers, public defenders and law professors. They have devoted their lives to protecting the many provisions of the Bill of Rights concerned with fairness in the criminal justice system. NACDL's interest in, and special qualifications for understanding H.R. 2507 are keen. I am here today to explain why we stand in firm opposition to H.R. 2507.

I. A HISTORY OF THE ISSUE

As you know, the United States Sentencing Guidelines became effective on November 1, 1987. The congressional authority for the creation of federal sentencing guidelines in criminal cases is found in The Sentencing Reform Act of 1984 (Title II of the Comprehensive Crime Control Act of 1984). This legislation was enacted to further the basic purposes of sentencing in criminal cases: rehabilitation, just punishment, deterrence and incapacitation.

To implement the above objectives, Congress established the United States Sentencing Commission ("Commission") as an independent agency in the judicial branch. 28 U.S.C. §991. The Commission's principal purpose is to "establish sentencing policies and practices for the federal criminal justice system that will assure the ends of justice by promulgating detailed guidelines prescribing the appropriate sentences for offenders convicted of federal crimes." United States Sentencing Commission, Guidelines Manual, ("USSG"), Ch.1, Pt.A, Intro., (Nov. 1995). These guidelines are to serve the further purpose of providing certainty and fairness in meeting the goals of sentencing and avoiding unwarranted sentencing disparities. 28 U.S.C. §991 (b).

In developing the federal sentencing guidelines for drug offenses, the Commission used drug quantity as the primary measurement for the seriousness of the offense. This was undoubtedly a result of the Anti-Drug Abuse Act of 1986, which targeted

drug kingpins and middle level managers and supervisors for stiff penalties. In so doing, unexpected consequences resulted, principally the trapping of low-level, non-violent drug offenders. Nowhere is this better illustrated than in the sentencing guidelines established for offenses pertaining to cultivation of marihuana.

The statutory penalty scheme for drug offenses is set forth in Title 21 of the United States Code. In 1986, with the enactment of the Anti-Drug Abuse Act of 1986, mandatory minimum penalties for marihuana offenses were established under 21 U.S.C. §841(b)(1)(A) and (b)(l)(B). These penalties provided for a five year mandatory minimum sentence for offenses involving more than 100 kilograms of marihuana and a ten year mandatory minimum sentence for offenses involving more than 1,000 kilograms of marihuana.[1]

Marihuana plants were not specifically addressed or included in the 1986 mandatory minimum penalty schemes. The Sentencing Guidelines, as originally enacted in 1987, provided that for offenses involving marihuana plants, each plant was to be treated as the equivalent of 100 grams of marihuana. USSG 2D1.1, comment. (n.10).

In 1988, however, the Anti-Drug Abuse Act of 1988 was enacted, which amended the mandatory minimum provisions of 21 U.S.C. §841 (b)(1)(A) and (B) to provide for mandatory minimum five and ten year sentences for offenses involving 100 or more and 1,000 or more marihuana plants, respectively. USSG, Appendix C, (Amendment 125).

In 1989, to comport with the new mandatory minimum sentences for offenses involving marihuana plants, the Commission promulgated amendments to the marihuana guidelines which became effective on November 1,1989. The new guideline provided an equivalency ratio of one plant equals 100 grams of marihuana in cases involving less than fifty plants, and one plant equals one kilogram of marihuana in cases of fifty or more plants. It is clear that these amendments were designed to mirror the changes to the drug sentencing statutes which became effective in 1988 with the enactment of the Anti-Drug Abuse Act of 1988.[2]

It appears that there is no support for and little reference to the 1988 and 1989 revised marihuana plant equivalency ratio of one plant equals one kilogram of marihuana in the statute, sentencing guideline, or even in the Congressional Record. In *United States* v. *Marshall,* 998 F.2d 634, 635 (8th Cir. 1993), for example, the Court noted that the Commission's "Background" statement on page 89 of the 1991 Guidelines Manual reflects that the source of the marihuana plant conversion ratio appeared to be derived from the mandatory minimum sentencing penalties in 21 U.S.C. §841 (b)(l)(A), (B) and (D). The Court in *Marshall* further noted that it was aware of only a single line in the Congressional Record pertaining to the mandatory minimum marihuana plant sentencing statute conversion ratio—one by Senator Joseph Biden (D–Delaware), which was not particularly indicative of Congress' rationale or intent in setting the ratio.

> Senator Biden explained that the Congressional action was designed to curtail "unnecessary debate" between prosecutors and defendants, and stated, without explanation, that "[T]he bill uses 1,000 plants as the equivalent of 1,000 kilograms." 134 Cong. Rec. S17368 (daily ed. Nov. 10, 1988). [*Id.,* at 636.]

The Court in *Marshall* also recognized that the 1991 edition of the Guidelines Manual (page 89) contained the Sentencing Commission's then published statement that "the average yield from a mature marihuana plant equals 100 grams of marihuana." [*Id.,* at 636.]

Until the Commission submitted proposed Amendment Number 8 to Section 2D1.1 [c] of the Sentencing Guidelines to Congress on May 1, 1995, which became effective on November 1, 1995, the sentencing guideline offense levels for marihuana plants remained illogically anchored to the mandatory minimum sentencing scheme contained in 21 U.S.C. §841 (b)(1)(A) and (B): for fifty or more plants, one plant equals one kilogram of marihuana and for fewer than fifty plants, one plant equals one hundred grams of marihuana.

II. THE REASONS FOR THE 1995 MARIHUANA SENTENCING GUIDELINE AMENDMENT ARE VALID

The most compelling argument for the amendment to the marihuana plant equivalency ratio is very simple: it is an accurate assessment of the average yield

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[1] 21 U.S.C. 841(a)(1)(B)(vii) and (b)(1)(A)(vii). A kilogram of marihuana contains 1,000 grams.

[2] Amendment 125 to the Guidelines, effective November 1, 1989, states that a purpose of the amendment is "to reflect the statutory change with respect to fifty or more marihuana plants (Section 6479 of the Anti-Drug Abuse Act of 1988) . . ." USSG, Appendix C, p. 116 (Nov. 1995).

of a marihuana plant and promotes truth in sentencing. The *prior* ratio of one plant equals one kilogram of marihuana was inaccurate, lacking in rational basis, divorced from reality and without foundational support, scientific or otherwise.

In proposing the amendment, the Sentencing Commission stated that its reason for doing so was:

> In actuality, a marihuana plant does not produce a yield of one kilogram of marihuana. The one plant = 100 grams of marihuana equivalency used by the Commission for offenses involving fewer than 50 marihuana plants was selected as a reasonable approximation of the actual average yield of marihuana plants taking into account (1) studies reporting the actual yield of marihuana plants (37.5 to 412 grams depending on growing conditions); (2) that all plants regardless of size are counted for guideline purposes while, in actuality, not all plants will produce use able marihuana (e.g., some plants may die of disease before maturity, and when plants are grown outdoors some plants may be consumed by animals); and (3) that male plants, which are counted for guideline purposes, are frequently culled because they do not produce the same quality of marihuana as do female plants. *To enhance fairness and consistency, this amendment adopts the equivalency of 100 grams per marihuana plant for all guideline determinations.* (Emphasis supplied.) Vol. 60, Federal Register, No. 90, May 10, 1995, Notices, 25078.

The Sentencing Commission considered several scientific studies and experts in arriving at the above conclusion. This material was gathered in part as preparation for the 1989 amendment precipitated by the changes in the mandatory minimum penalties of 21 U.S.C. 841.

Joseph Antognini of the Tropical Plant Research section of the Department of Agriculture provided data establishing that a marihuana plant could be expected to yield between 37.5 and 151 grams of dry, leafy (smokeable) material.

James Urbanek at the University of Mississippi conducted government-sponsored research involving the actual growing of marihuana plants. His scientifically based estimate of dry, smoke able material from an outdoor plant was between 295 and 412 grams. For an indoor plant, his estimate was between 118 and 177 grams.[3]

The U.S. Parole Commission's *Rules and Procedures Manual* used a ratio of one plant equals one quarter pound of use able marihuana (four ounces amounting to 112 grams). 28 C.F.R. 2.20. This grading was adopted by the Parole Commission after receiving and evaluating extensive comments from organizations such as the DEA and NORML (National Organization for the Reform of Marijuana Laws). As is the case with all Parole Commission regulations, this regulation was published for public comment under the Administrative Procedures Act before final enactment.

In 1990, Dr. Mahmoud A. ElSohly, Research Professor and Program Coordinator of the Drug Abuse Research Program from the Research Institute of Pharmaceutical Sciences, School of Pharmacy, University of Mississippi located in Oxford, Mississippi testified in a federal court trial in Georgia. The judicial opinion outlining his findings and studies is contained in *United States* v. *Osborn,* 756 F.Supp. 571 (N.D. Ga. 1991). In this opinion, the Court identifies Dr. ElSohly as having been involved in growing marihuana since 1976 and as being the only person with a contract with the government to grow marihuana. He has a Ph.D in pharmacognosy, and at that point had published over one hundred research papers, and had testified in more than sixty trials involving controlled substances.

According to Dr. ElSohly's trial testimony in *Osborn,* based upon his experiments, studies and research aimed at determining the average weight of usable marihuana produced by a marihuana plant, he would not expect a plant to yield a kilogram of marihuana. He had never seen nor grown such a plant. His testimony was that a sentencing scheme of plant equals 100 grams of marihuana would be reasonable, but that one based on 1 plant equals 1 kilogram would be unreasonable. *Id.,* at 573.

The Drug Enforcement Administration utilized Dr. ElSohly's research in its 1992 publication entitled "Domestic Cannabis Eradication Suppression Program."

In light of the evidence from scientific studies that the average yield of marihuana plants is 100 grams, not one kilogram of marihuana per plant, the kilogram-per-plant ratio is irrational, arbitrary, and unreasonable. And it can no longer be overlooked or denied that the ratio resulted in unfair and economically inefficient long prison sentences.

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[3]James E. Urbanek, B.B.A., Research Professor and Assistant Director, Research Institute of Pharmaceutical Sciences, School of Pharmacy, University of Mississippi, University, MS 38667.

III. ARTIFICIAL MANIPULATION OF THE MARIHUANA PLANT SENTENCING GUIDELINE RATIO IS NEITHER APPROPRIATE NOR NECESSARY AS A MEANS BY WHICH TO PUNISH DRUG OFFENDERS

The Sentencing Commission has included the following as background commentary to the amendment to USSG §2D 1.1 respecting marihuana plant equivalency ratios in the 1995 Guidelines Manual:[4]

> The base offense levels in §2D 1.1 are either provided directly by the Anti-Drug Abuse Act of 1986 or are proportional to the levels established by statute, and apply to all unlawful trafficking. . . . [H]owever, further refinement of drug amounts is essential to provide a logical sentencing structure for drug offenses. To determine these finer distinctions, the Commission consulted numerous experts and practitioners, including authorities at the Drug Enforcement Administration, chemists, attorneys, probation of fleers, and members of the Organized Crime Drug Enforcement Task Forces, who also advocate the necessity of these distinctions. . . .
>
> For marihuana plants, the Commission has adopted an equivalency ratio of 100 grams per plant, or the actual weight of the usable marihuana, whichever is greater. *The decision to treat each plant as equal to 100 grams is premised on the fact that the average yield from a mature marihuana plant equals 100 grams of marihuana.* (Emphasis supplied.)

The federal sentencing guidelines for drug offenses have been based on the quantity of the substance at issue since their inception in 1987. The quantities must not be artificially manipulated to increase punishment for drug offenders.

The Sentencing Guidelines currently in effect more than amply allow for increased terms of incarceration and punishment in appropriate cases, without resorting to irrational and inaccurate drug equivalency ratios.

For example, under USSG §1B1.3, the Court can consider uncharged relevant conduct to increase the offender's base offense level. Thus, if the defendant was only charged with one marihuana grow, but evidence at trial or sentencing established by a preponderance of the evidence that he or she had participated in four prior related grows, the defendant is to be sentenced for the total number of plants in all five grows.

If the defendant had a managerial or supervisory role in the offense, his or her base offense level can be increased anywhere between two and four levels. USSG §3B1.1.

If a dangerous weapon or firearm was possessed in relation to the offense, a two point upward adjustment to offense level is allowed in USSG §2D1.1 (b)(1). If the plants were to be distributed in a prison, a two point increase is provided for. USSG §2D 1.1 (b)(3). Similar increases to the base offense levels are provided for in cases involving obstruction of justice, abuse of position of trust or use of a special skill, using a minor to commit a crime, personal injury, or reckless endangerment during flight.

There are increases in guideline offense levels that must be applied if the offense occurs near a protected location, or involves a pregnant woman or an underage person. USSG §2D1.2 (a).

If the offender has an egregious prior record, the Court can depart upward and impose a greater sentence under USSG §4A1.3. If the defendant is on probation, parole or under a criminal justice sentence at the time of the commission of the instant offense, the Court must add two points to the defendant's criminal history points under USSG §4A1.1(d).

There is simply no justifiable or excusable rationale for using an invalid, outdated and artificially created yardstick such as the continued equation of one marihuana plant equals one kilogram of marihuana instead of the true ratio of one plant equals 100 grams of marihuana to increase prison and other penalties solely in offenses involving the cultivation of marihuana. Notwithstanding the perceived ills associated with marihuana cultivation, the infliction of more severe punishment of individuals found guilty of marihuana cultivation than on those convicted of marihuana distribution and importation offenses—in the absence of clear and rational congressional intent, and in the face of direct scientific evidence that the ratio utilized to accomplish such increased punishment is wrong—results in an egregious and unjustifiable deprivation of constitutional due process rights as guaranteed by the Fifth Amendment to the United States Constitution.

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[4] USSG §2D1.1, comment. (n. 18), (backg'd) (November, 1995), p. 97.

IV. CONCLUSION

In its enabling legislation to the United States Sentencing Commission (28 U.S.C. § 994(o), Congress specifically directed the Commission to periodically review and revise the sentencing guidelines "in consideration of comments and data coming to its attention . . . ." The Commission is to accomplish its review and revision process by consultation with other individual and institutional representatives of various criminal justice agencies.

28 U.S.C. § 994(p) directs the Sentencing Commission to submit proposed guideline amendments to Congress on the first day of May of each calender year, along with a statement of the reason for any proposed amendment. In 1995, the Sentencing Commission followed its Congressional directive with respect to the equivalency ratio of marihuana plant used to determine sentencing guideline levels for marihuana cultivation offenses. Congress agreed with this well-studied, proposed amendment. For Congress to step in now and reverse that judgment, which has already become law, *in the absence of new and compelling evidence that the amendment is scientifically unsound or otherwise irrational,* flies in the face of the authority granted to the Sentencing Commission.

The amended marihuana equivalency ratio of one plant/100 grams contained in USSG § 2D1.1, effective November 1, 1995 is accurate, sound, valid and supported by the clear weight of scientific evidence. It should not be disturbed by Congress.

Mr. MCCOLLUM. Thank you, Ms. Merritt.

Mr. Brookhiser, you are recognized. You may give us you full statement or a summary thereof.

STATEMENT OF RICHARD BROOKHISER, SENIOR EDITOR, NATIONAL REVIEW

Mr. BROOKHISER. Thank you, Mr. Chairman. Is this mike OK?

Mr. MCCOLLUM. The mike's fine. We have about 10 minutes before we'll have to leave for a vote.

Mr. BROOKHISER. OK. This is my first time doing this.

I'm a life-long conservative Republican. The only reason I didn't vote for Barry Goldwater was because I was 9 years old when he ran for President. But I did start writing for National Review when I was 14.

I'm for medical marijuana because of my politics. But I'm also for it because I've had to use it. As a political reporter, I measure everything by election cycles. The year Ronald Reagan won I got married; the year Bill Clinton won I got cancer, testicular cancer, and the treatment for it is pretty straightforward. You have an operation, and you have a rather nasty form of chemotherapy. The main chemical in that is cisplatin, which is actually derived from platinum. And it feels like platinum is what you are putting into your system.

But all chemotherapy is harsh because all chemotherapy is poison. You're dumping poison into your bloodstream and you're killing millions of cells in order to kill the thousands of malignant ones which won't recover. But because it's poison, the body wants to get rid of it and that's why chemotherapy patients get nauseous.

To deal with my nausea, I took the latest antinausea drugs, including zofran, and I also did self-hypnosis and mental imaging. And these all worked—up to a point. But beyond that point I needed extra help, and so I took marijuana.

I had smoked marijuana maybe 10 times in college during the seventies. I even inhaled. I stopped because I found I didn't like smoke, or being high, or the conversation of potheads. I turned to it when I got cancer because marijuana gives healthy people an appetite and prevents people who are nauseated from throwing up.

None of my doctors or nurses at Memorial Sloan-Kettering or at New York University Medical Center discouraged me from doing this. They had all had patients who had used marijuana to fight nausea and who had reported good results. My own oncologist did his own survey of oncologists, which I'll get to the committee later, if it should want it.

I had good results, too. Because of the marijuana, my last two courses of chemotherapy were almost nausea-free and I became the perfect citizen of a drug-free America; I would not touch another joint if I was paid.

There was only one problem. I had to become a criminal. Cancer patients are not the only people in this bind. As you've heard, AIDS patients who have the wasting syndrome report that marijuana gives them an appetite again; glaucoma patients find that it arrests the deterioration of their eyes. People with chronic migraines, epilepsy, and multiple sclerosis use it to relieve their symptoms.

And a good summary of all these experiences can be found in "Marijuana: The Forbidden Medicine," by Lester Grinspoon, M.D., and James B. Bakalar. The book is published by Yale University Press, so it's not something downloaded from the Internet.

But any sick person who wants to use marijuana to help himself has to break the law. Now I belong to the media elite and I live in Manhattan, so I was not at high risk. But out in the fly-over ZIP Codes, plenty of people get arrested and plenty of them go to jail.

There are three common arguments against the medical use of marijuana, I think all of them faulty. The first is that THC, which is the main active ingredient in the drug, is available in a legally-prescribable pill form. But the pill has problems. It's expensive, and because it's a pill and therefore slower acting, people have trouble adjusting the dosage and they often find themselves taking too much. It also has side effects. People who use it report anxiety and depression. In my case I thought treating nausea with a pill was not a very bright idea.

The second argument is that smoked marijuana has never been tested scientifically. Now this is not entirely true. One test was done at UCLA in 1970 for the Los Angeles Police Department, which wanted to prove that pot smoking dilated the pupils. The researchers found that it actually contracted the pupils; they also discovered that marijuana relieved pressure within the eyeball and this is why it's useful in treating glaucoma.

But it is true that it is difficult to test marijuana. That's because the Government makes it so. The case of Dr. Donald Abrams at San Francisco General Hospital is instructive. Dr. Abrams is an AIDS researcher who wants to test the efficacy of smoked marijuana in treating the wasting syndrome. For more than 2 years he tried to get marijuana legally from the National Institute on Drug Abuse for his experiments, to no avail. So doctors can't prescribe marijuana because it hasn't been tested, but doctors aren't allowed to do any tests. This is a classic catch-22.

The third objection is that by legalizing marijuana in one area we will be setting a bad example to a society engaged in the War on Drugs. But, in fact, we will be setting no example at all. The availability of morphine in hospitals is not the reason people smoke

crack. A hairless cancer patient with an IV tube in his arms, which is what I was, is not a come-on for a pusher.

The connection between the issue of medical marijuana and the War on Drugs runs the other way. The reason we don't allow medical use is because of the spill-over of an extreme war-time psychology. My magazine, National Review, has taken a stand on the War on Drugs, but that's not relevant here or to my argument. If you think the War on Drugs is wrong, then the ban on medical marijuana is just one symptom of its excess. But if you think the War on Drugs is right, then the ban is an irrelevant and overzealous offshoot, like fighting the Kaiser in World War I by changing the German names of Midwestern streets.

I want to end by addressing my fellow Republicans. My support for medical marijuana is not a contradiction of my principles, but an extension of them. I am for law and order. But crime has to be fought intelligently, and the law disgraces itself when it harasses the sick. I'm for traditional virtues. I support the Christian Coalition and I supported the Moral Majority before it. But carrying your beliefs to unjust ends is not moral; it's philistine. Most important, I believe in getting Government off people's backs, and we should include the backs of sick people trying to help themselves.

My cancer seems to be gone. In a year I will be at the 5-year point where oncologists tell you, not that you're cured, but that you're at the 5-year point. I was very lucky. But having gone through chemotherapy, I can say that God forbid that anyone in this room should have to do it, but statistics show us that many of us will. And let me just assure you that, whatever you think now, or however you vote, if that moment comes to you or to someone close to you, you will turn to marijuana. Extend that liberty to your fellow citizens.

Thank you.

[The prepared statement of Mr. Brookhiser follows:]

PREPARED STATEMENT OF RICHARD BROOKHISER, SENIOR EDITOR, NATIONAL REVIEW

I am a conservative Republican. I am a senior editor of National Review, Ronald Reagan's favorite magazine. I've written for it for 26 years. I am for medical marijuana because of my politics. But I'm also for it because I've had to use it.

In 1992 I got testicular cancer. The treatment was straightforward--an operation, followed by a rather harsh form of chemotherapy. Any chemotherapy is harsh, because all chemotherapy is poison. You're dumping poison into your bloodstream, killing millions of cells, in order to kill the thousands of malignant cells, which will not recover. Because it is poison, the body wants to get rid of it. That's why chemotherapy causes nausea. To deal with this, I took the latest anti-nausea drugs, and I also did self-hypnosis and mental imaging. These all worked--up to a point. But beyond that point, I needed extra help, and so I smoked marijuana.

I had smoked marijuana maybe ten times in college, during the seventies. I even inhaled. I stopped because I found I didn't like smoke, or being high, or the conversation of pot-heads. I turned to it when I got cancer because marijuana gives healthy people an appetite, and prevents people who are nauseated from throwing up. None of my doctors or nurses at New York University Medical Center, or Memorial Sloan-Kettering, discouraged me from doing this. They had all had patients who had used marijuana to fight nausea, and who had reported good results. I had good results too. Because of the marijuana, my last two courses of chemotherapy were almost nausea-free.

There was only one problem--I had to become a criminal to do

this.

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The first is that THC, the main active ingredient in the drug, is available in a legally prescribable pill form. But the pill has problems. It's expensive. Because it's a pill, and therefore slower acting, people have trouble adjusting the dosage; they often find themselves taking too much. In my case, I thought treating nausea with a pill was not a bright idea.

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wanted to prove that pot-smoking dilated the pupils. The researchers found that it actually contracted the pupils; they also discovered that marijuana relieved pressure within the eyeball. This is why marijuana is useful in treating glaucoma.

But it is true that it is difficult to test marijuana. That is because the government makes it so. The case of Dr. Donad Abrams at San Francisco General Hospital is instructive. Dr. Abrams is an AIDS researcher who wants to test the efficacy of smoked marijuana in treating the wasting syndrome. For more than two years, he tried to get marijuana legally from the National Institute on Drug Abuse for his experiments--to no avail. So doctors cannot prescribe marijuana because it hasn't been tested, but doctors aren't allowed to do any tests. This is a classic Catch-22.

The third objection is that by legalizing marijuana is one area, we will setting a bad example to a society engaged in a war on drugs. In fact we will be setting no example at all. The availability of morphine in hospitals is not the reason people smoke crack. A hairless cancer patient with an IV tube in his arm is not a come-on for a pusher.

The connection between the issue of medical marijuana and the war on drugs runs the other way. The reason we don't allow medical use is because of the spill-over of an extreme war-time psychology. National Review has taken a stand on the war on drugs, but it is not relevant here. If you think the war is wrong, then the ban on medical marijuana is simply one symptom among many of its excess and folly. If you think the war is right, then the ban is an irrelevant and over-zealous off-shoot,

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My cancer is gone now; I was lucky. God forbid that anyone in this room should ever need chemotherapy. But statistics tell us that many of us will. Let me assure you that, whatever you think now, or however you vote, if that moment comes to you, you will turn to marijuana. Extend that liberty to your fellow citizens.

Mr. MCCOLLUM. Thank you very much, Mr. Brookhiser.

I think this would be an appropriate time to take a recess because of the vote that's on. We'll resume as soon as the vote is concluded, so we can conclude the hearing and not keep the witnesses any longer. This committee is in recess.

[Recess.]

Mr. MCCOLLUM. This hearing of the Subcommittee on Crime will come to order again.

When we recessed, we had just finished with Mr. Brookhiser's testimony, and I think we've now completed all of the testimony and are prepared to go to the questioning. I'm going to recognize myself for 5 minutes and then Mr. Scott and whomever else may come in.

Ms. Merritt, I want to turn to you first because it seems that some sequencing of things might be in order. With regard to the question of the punishment of those who use, or actually sell marijuana in this case, I'm curious as to what you or your organization think about the argument that I've heard made, and you may have heard me ask this in the first panel questioning, in terms of maybe we ought to have a separate crime or separate punishment simply for the plants themselves, in marijuana's case, as opposed to going by weight or gram, although you might still have this for sales and transactions on the street, and what-not, punishment for the grams the way that maybe the Sentencing Commission has.

But what about the idea of our going to something peculiar just for the certain number of plants you grow since you're obviously in the business of growing marijuana, if you will? Is there any thought about that that you could give us?

Ms. MERRITT. Well, I think the main thing you have to make sure of is that, if you go to something that creates a separate penalty structure for plants, that it's based on something that's rational. Now if we're getting scientific studies that use 100 grams per plant based upon average yields, that's still average. And then you would have to find why you are going to be treating plants differently. Is there a greater harm associated with persons who grow plants as opposed to a person who sells the marijuana yield, as opposed to the person who imports it, as well?

There are all sorts of different acts which are prohibited by Congress and punished in connection with marijuana. I think there would have to be a rational basis for punishing one more severely than punishing the other, and our point today is mainly devoted to the fact that the one that was in existence was scientifically inaccurate, mathematically invalid, and now it is correct.

Mr. MCCOLLUM. Well, as you're aware, the committee itself and the Congress decided to let that stand, and the only question now are the challenges people have had second-guessing us, saying we didn't get a chance to testify; we didn't get a chance to criticize this. And as you may have heard and seen today, we have some evidence up here. There are a number of scientific studies that have varying opinions as to how many grams you get per plant or whatever, but none of them go to a kilogram; that's for sure.

Ms. MERRITT. Right.

Mr. MCCOLLUM. So I think that your point is really well made and I appreciate it. Our only consideration is a public policy ques-

tion when it comes to the plants, if we want to make growing a unique crime. Maybe we do; maybe we don't, but that's a question.

Ms. MERRITT. There's also one other thing I just thought of to answer your question. If you look at why the Sentencing Commission decided that the number of grams needed to be changed, part of it was because, when you're dealing with plants, not everything they plant will turn out to be a plant; plants will get killed when they're planted outdoors. So at what point do you measure the plants?

Mr. MCCOLLUM. Right. Good point.

Mr. Stroup, I've got to raise a question or two with you. Extensive studies of marijuana, I believe, have clearly shown that there are dangers associated with the drug, including the gateway effect, even though you've testified otherwise here today. According to a study by Columbia University Center on Addiction and Substance Abuse, 12- to 17-year-olds who use marijuana are 85 times more likely to use cocaine than those who abstain from marijuana. The study further reveals that 60 percent of adolescents who use marijuana before the age of 15 will later use cocaine, while 43 percent of teenagers who use marijuana by age 18 will later use cocaine. Can you comment on those findings?

Mr. STROUP. Yes, I think there are two points I might quickly make. I did include an attachment that attempts to address that by Dr. John Morgan, but let me make two brief points.

First, in almost every case, Mr. Chairman, I think that you would find that, if you're talking about people who have eventually used cocaine, the first drug they used was almost never marijuana; it was almost always alcohol or tobacco, and both of those drugs were illegal when they used them. They were minors. So, I don't quibble that most cocaine users have smoked marijuana at some time, but even before that they used alcohol usually and/or tobacco.

Mr. MCCOLLUM. Yes, but there are a lot of people who use alcohol and tobacco and never use marijuana and never use cocaine.

Mr. STROUP. I agree. And 86 percent of the people, even under that CASA study, who used marijuana never went on to cocaine. I'm not a statistician, so I'm not in a position to challenge how CASA came to that conclusion, but, as I understand it, what they found is that 16 percent of those who smoked marijuana at some time tried cocaine. Well, the other way to look at that is that 86 percent of the people who smoked marijuana did not go on to cocaine.

Mr. MCCOLLUM. Well, let me ask you this question: your organization professes to be opposed to young people under age using marijuana.

Mr. STROUP. That's correct, sir.

Mr. MCCOLLUM. And yet you saw the studies here earlier that show this enormous, steep increase in use among those young people in the last 3 or 4 years, and you've heard explanations of it, and so forth. Isn't the very example that is set out there by adults a very big factor in the use of marijuana by young people? In other words, as much as you want to take the libertarian approach, if you will, to use of marijuana and say hands off, let's treat it like alcohol—and I'm not giving you all the scientific evidence, but let's set the argument aside for the moment—let's just think strictly in terms of trying to protect these young people. How can we do that

when they're so influenced by the example of adults? I mean how can we legalize it for adults and not expect young people to take that as an example and trend up their use, legal or illegal?

Mr. STROUP. I think you're right in that the trends of the last 3 or 4 years demonstrate that we are not successfully educating our young people about the need to stay away from all drug use, and that would include alcohol, tobacco, and marijuana, while they're adolescents. It's why I've suggested honestly that, if there was more integrity, I believe, in our drug education, I believe we might have more effect at convincing them——

Mr. MCCOLLUM. Last thing—I want to turn to Mr. Scott—but one of panelists this morning suggested this morning that your advertising or that of a couple of the other groups, maybe the Drug Policy Foundation, I think, stepped up during this period of time and that that type of advertising saying marijuana's OK in their opinion was a big factor in why marijuana use went up among young people? What do you say to that?

Mr. STROUP. Well, first off, we don't do any advertising. I wish we had the budget to try to do some honest drug education, but regrettably we don't.

Mr. MCCOLLUM. But there's been some by some organizations who do support marijuana legalization.

Mr. STROUP. What I would suggest, Mr. Chairman, is that we all have a common stake in discouraging adolescent drug use and that includes marijuana smoking. What we have learned, that since 1991 until now, the increase in marijuana arrests has been extraordinary, 67 percent. We have almost a half a million people each year who are arrested. So if we could scare young people from using marijuana, surely we would have done it in the last 3 years. But what that data shows is that, at the same time that we've almost doubled the number of Americans that we're arresting on marijuana, in fact, the kids have increased their usage.

So I think there's very little connection between our scaring people and arresting people versus giving them honest drug education. I think the kids simply don't believe the Government because they think there's too much exaggeration in some of their drug education. Whether or not that's a valid position, I think that's what the kids feel.

Mr. MCCOLLUM. Mr. Scott, you're recognized for 5 minutes.

Mr. SCOTT. Thank you, Mr. Chairman.

Mr. Stroup, on the first page of your testimony you indicate that far more harm is caused by marijuana prohibition than marijuana itself. Could you elaborate on that?

Mr. STROUP. Yes. When you take a half a million people a year, and we've been running anywhere from 250,000 up to 400,000 now for over 20 years, of Americans who are arrested and jailed and given criminal records, their careers are wiped out, they lose their jobs, that's an incredible price to pay simply to make a statement that we'd rather you drink alcohol than smoke marijuana.

The reality is we know the biggest problem we have in terms of highway deaths, et cetera, is alcohol-related. It's not even close to marijuana. It's so far more dangerous in terms of those kinds of accidents. In terms of health risks, is there anyone on this committee that doubts that tobacco smoking and cancer are grossly more dan-

gerous than any problems we have health wise with marijuana smoking?

Mr. CONYERS. That hasn't been resolved yet, sir.

Mr. STROUP. It hasn't been resolved that tobacco smoking is dangerous?

Mr. CONYERS. No, which is the more dangerous.

Mr. STROUP. Well, let me ask you this——

Mr. CONYERS. Well, don't ask me anything. I'm going to ask you questions.

Mr. STROUP. All right. No offense, Mr. Conyers.

Mr. CONYERS. I'm not offended.

Mr. STROUP. Let me say that I know of no individual in the history of this country who has ever died from smoking marijuana, whereas we have tens of thousands of individuals that die from cancer-related cigarette smoking every year. So, surely this committee is not still debating the merits of those two.

Mr. SCOTT. On the question of prohibition, does the prohibition have any consequence in the issue of being a gateway drug?

Mr. STROUP. Well, it's certainly an issue that we need to pay attention to. I believe, for example, the difference between the Netherlands and the United States is instructive. In this country, apparently, the latest data shows that about 16 percent of folks who smoke marijuana eventually will at least experiment with cocaine. That's less than 2 percent in the Netherlands where they make an attempt to separate soft drugs from hard drugs. In this country what we've said is, tobacco and alcohol are over here, and they may have problems—I don't think anyone suggests that they're harmless—but they're our soft drugs in this country. But over here we say you've got heroin, cocaine, marijuana, and anything else. So, it shouldn't surprise us that there's a certain amount of experimentation because these are all available only from the black market.

In Holland, for example, where they've taken marijuana and put it over with alcohol and tobacco, they have less than 2 percent of their marijuana smokers ever experiment with hard drugs. So, yes, I think it is a legitimate question for us to watch, but I don't think it's a major problem.

Mr. SCOTT. What effect does jail have on marijuana use or other drug use?

Mr. STROUP. Well, it apparently has almost none, because, again, in the last 3 years where you've seen the sharp increase in adolescent marijuana smoking, for example, it's at the same time that we've been locking up record numbers of people; 1994 was the most Americans we've ever arrested on marijuana charges any time in our history, almost a half a million. So I think there's very little connection between usage rates of the population and arrest rates for the use of the drug. However, I think we all recognize that anyone who has a job and has family and has the same kinds of concerns all of us have, if you're arrested and thrown in jail, it has an incredibly tragic impact, not just on you, but on your family and on your kids and on your ability to support your family.

Mr. SCOTT. And that effect takes place at the time of arrest, whether you're in jail for one day or for 5 years.

Mr. STROUP. Yes, Congressman, I would say for most people the damage is done at the point of the arrest. That's where you pick

up a criminal record. That limits your employability later in life. That's probably going to cost you your job. It is true that we no longer send most people who are arrested on marijuana charges, if it's a simple marijuana possession, we don't send them to jail as long as we did in the 1960's and the 1970's. Fortunately, we've moderated that response, but we still arrest them.

We still use police resources, we still take police off the streets who should be used fighting serious crime. Because every time you arrest a marijuana smoker, you've got to go down to the station, spend a couple of hours filling out those forms and booking that marijuana smoker while you're not out on the street fighting crime.

Mr. SCOTT. I have no further questions.

Mr. MCCOLLUM. Thank you, Mr. Scott.

Mr. Coble, you're recognized for 5 minutes.

Mr. COBLE. Thank you, Mr. Chairman. Mr. Chairman, I apologize to you and the panel for my absence. I had to go to another subcommittee meeting, so I'm trying to be ubiquitous. I regret that I missed most of this panel.

As to jail, the gentleman from Virginia asked you, Mr. Stroup, about jail sentences. I think whether or not jail sentences have an adverse effect is probably subject to interpretation. Now some say no; some say yes. Mr. Heineman, the gentleman from North Carolina, insists that it does have a direct effect.

Mr. CONYERS. Mr. Chairman, a point of order please. A witness has left the table here. Did you know he was leaving?

Mr. MCCOLLUM. Mr. Conyers, you're quite correct, and, no, we did not know he was leaving, and I was just asking my staff about that. I do not know why he left, but he has chosen to go.

Mr. STROUP. Mr. Chairman, my understanding was that he had to be out of here by 2.

Mr. CONYERS. Well, he has to be in here until the chairman lets him go.

Mr. MCCOLLUM. Mr. Conyers, you're quite correct. I don't know the circumstances.

Mr. CONYERS. What the heck is this?

Mr. MCCOLLUM. But, nonetheless, he did it.

Mr. CONYERS. Well, so I hope that we will be able to submit questions to him. You know he came in here and trashed Democrats, bragged about Republicans, doesn't have any support, and then walked out when he got good and ready.

Mr. MCCOLLUM. Mr. Conyers, you can be assured that I did not know about it; I did not condone it.

Mr. CONYERS. No, I'm talking about what your responsibility is, sir.

Mr. MCCOLLUM. You'll certainly be allowed to submit questions to him. I was just as shocked as you were that he just walked out. I wanted to ask him some questions myself.

Mr. CONYERS. Well, I would hope that after you get over your shock, Mr. Chairman, that you will take some adequate controls as the chairman of this committee.

Mr. MCCOLLUM. Well, Mr. Conyers, if you had been sitting here and the fellow had walked out and you were wondering why he was walking out and he just went ahead and walked out, and you didn't know in advance, you'd have had no more control than I did.

Mr. Coble, you're recognized.

Mr. CONYERS. Mr. Chairman, I'm talking about——

Mr. MCCOLLUM. Mr. Conyers, you're out of order, with all due respect.

Mr. CONYERS [continuing]. Afterward, not now.

Mr. COBLE. As I was saying——

Mr. MCCOLLUM. Mr. Coble, you may proceed.

Mr. COBLE. OK, thank you. I won't use the entire 5 minutes, Mr. Chairman.

But, Mr. Stroup, I think that is subject to interpretation and we can talk about that at a later time.

Now, as my fellow colleagues on the panel now, I hail from tobacco road, so when you talk about tobacco, you're talking about something that is close to home to me. I am averse to minors, children, consuming tobacco, alcohol, marijuana. Now when these children attain their majorities, I am not averse to their opting to consume alcohol in moderation and tobacco in moderation. I am averse to their consuming marijuana or drugs. I just believe folks, when people try to make consuming tobacco analogous to consuming drugs, I just can't buy off on that. I just don't believe they're analogous. I got in here on the tail end of your testimony, Mr. Stroup, and you may well disagree with me about that, but I believe that they are clearly apples and oranges.

But I'll look forward to reviewing the testimony that I missed here, Mr. Chairman, and I again commend you for having called this hearing, because I think this subject matter is vital and very important to peruse in detail and peruse deliberately and peruse thoroughly, and I thank you for putting it together and I thank the panelists for having been with us.

Mr. MCCOLLUM. Thank you very much, Mr. Coble.

Mr. Conyers, you're recognized for 5 minutes.

Mr. CONYERS. Thank you, Mr. Chairman.

I want to begin by commending the trial lawyers' representative, Attorney Merritt, for pointing out an incredible discrepancy. This is as equally bad as crack cocaine disparity in the law. Let us hope that the legislature will take a more sensible and enlightened approach about this than they did with the Commission's work on trying to eliminate the crack cocaine disparity. And I think you may be able to count on us, and the chairman of this committee has been known to work with us on these kinds of egregious discrepancies that exist in the criminal law.

Ms. MERRITT. Thank you.

Mr. CONYERS. Attorney Stroup, we've got a few problems here. And I am making myself available to you and to every member of NORML in the State of Michigan to meet with me and discuss this out. And I am not taking any prejudicial views about this subject matter. I am open. I firmly believe that there is a medical benefit to marijuana that ought to be acknowledged and accepted into the law. Now, having said that, we have a problem. I would like to find out, not at this hearing, but I would like to be provided by your organization with the kinds of activities that you've engaged in to help reform the marijuana laws in the United States.

I am very interested, or disappointed, in the failure, and maybe this wasn't an angle you had to consider since you have a wide set

of subissues within this subject, but you know, the kids aren't crazy, and I'm going back to the young people now. I thought in Ann Arbor, for example, that there were very modified laws as to possession of marijuana and in other cities around the country, but that does not change the Federal attitude and approach on it and I recognize that, and I think that this is an appropriate forum for us to discuss that.

But in your experience, are you and I not in agreement that culturally, socially, when the icons of what young people look up to, support, enjoy, pay their money to hear, listen, read, and see on the tube, when they're all saying that it's OK to smoke pot, aren't we just throwing water into the wind talking about these high flown matters that, as far as youngsters can see and hear and read—and they're not crazy—is that society has generally said, forget the laws? I mean there are several thousand laws on the books. Nobody knows them all.

The point is this is one of the ones you sort of forget, because they smoke pot on TV, because it's indulged in by the rock stars, because when you go to a rock concert, the whole place has been lit up with joints. So then they come home and your mother asks you, "Are you high," and you say yes, and then she puts you down for telling the truth, and then some guy runs an ad and says, "That's wonderful, isn't it?"—that's a great way to get kids shaped up.

Now if you can explain to me that there is a program going on to reach youngsters, that there is a cultural acknowledgment, that we're in over our heads. We can pass laws all we want.

Now, finally, I want to agree with those who say that we're overprosecuting this subject. And there needs to be reason and rationality brought into it. In many places it's an excuse to bust people in the underclass and minorities. Look who are in the prisons as a result of it. Now do we have any basis for further discussion in this matter that we've met on this morning?

Mr. STROUP. Yes, Mr. Conyers. I would be delighted to take you up on your kind offer and to arrange a meeting at your convenience to discuss some of this further. I would suggest that, without a doubt, icons of our culture have some impact on our young people's attitudes. But I believe the major element that comes into play is whether we are dealing honestly when we tell young people about the risks.

For example, cocaine has been illegal since I think the 1920's and has remained consistently illegal. Yet there's been a dramatic decrease in cocaine use—set aside for the moment the rise of crack cocaine, which is a separate phenomena, and I agree with you about the problems with the sentencing on that—but in the cocaine use overall, we have experienced a dramatic decrease in the last few years. And I think that's because the people of the age that might have been interested in using cocaine honestly learned that it is not good for them, that it's difficult for them to have productive lives and productive careers and good family relationships if they're using cocaine. And so the result is it's not nearly the problem it was a few years ago.

I do think that, if the goal is to simply arbitrarily say we're not comfortable with marijuana because culturally we're more used to

alcohol than we are marijuana, and there's no doubt we are in this country, but if the goal is that we set out and say, even if the science doesn't support it, we've got to convince these kids that marijuana is really dangerous, that's a policy that is going to fail, Representative Conyers, because it's not backed up by science. And the kids eventually find that out.

Now, again, I don't think any kids should be using any drugs, whether they're a little bit dangerous or a lot dangerous, but I do think that for the adult population, what we have to do is be honest and give our citizens good information and trust them, generally, to make intelligent decisions. And I think we see some signs where they do that.

Mr. CONYERS. That's a good start, and my time has expired. But I just want to tell you that, medically, we've had only one doctor on this panel, and he is not even willing to concede that there is a therapeutic medicinal value, but think about the American Medical Association. And this is what Mr. Brookhiser and I would have discussed. While he is talking about people that are supporting and not supporting, I haven't heard the American Medical Association coming out in support of the use of marijuana for pharmaceutical or medical effects. They're a bunch of Republicans, politically, as far as I'm concerned. They've been awfully silent on it. Where is his doctor? Where is the medical story that needs to be told?

And I don't think that even in our discussions we can assume that this is a medical assumption. I mean, alcohol is abused. That's the problem in America. And guess who pays for the abuse and the effects of that abuse? We do. Guess who pays for the effects of the abuse of tobacco? We do. Guess who pays for the abuses of marijuana? We do. So for anyone to suggest, as I thought someone, maybe yourself, said that this is something that's not within the purview of the Congress, the Federal lawmakers, I think it's very, very much within our jurisdiction and of this committee in particular.

Mr. MCCOLLUM. Thank you, Mr. Conyers.

Mr. Barr, you're recognized for 5 minutes.

Mr. BARR. Thank you, Mr. Chairman.

Mr. Stroup, I have mixed feelings about your being here. On the one hand, I hate to see you being provided a forum for the absurdity of your arguments. As absurd as they are, there are young people that you reach. And I think that's very unfortunate, that we're even giving you a forum to preach this ridiculous message. But, on the other hand, I think it's also important to have you here to show our young people and adults, too, that might otherwise be inclined to use marijuana, that there still is a problem out there. And, perhaps most importantly, to have you here as a signal to people who want to continue to fight against mind-altering drugs that there still is an enemy out there. And you are the enemy in my view. Telling young people that's it's OK to impair their minds, to harm their ability to learn, harm their ability to remember facts that are important in their schooling.

I mean, there are just so many contradictions in your work here. On the one hand, you say that these Americans who smoke marijuana are responsible citizens; yet, they're obviously violating the law, and whether or not you like them to be smoking marijuana,

it still is violating the law. And I find it a rather strange state of affairs to say that people that violate the law the way I want them to violate the law are responsible citizens. You may feel that they are otherwise responsible citizens, but I think telling people who violate the law that they are responsible by violating the law is not exactly accurate.

I also am really very curious as to why you believe, as I mentioned earlier, that the use of marijuana, which is inhaling smoke the same as tobacco, is not just less harmful but far less harmful than tobacco. And the problem I think is, and even you have to admit and your paper here does, that the use of cannabis, the use of marijuana, the use of THC, can impair one's ability to perceive and to react to the world around them. I mean it says right here that you don't think it's responsible to drive dangerous machinery impaired by cannabis. It does impair your ability to perceive and to react to world around you. That, to me, is why this is a dangerous drug, why it is a mind-altering drug. It does alter your mind. That's why people use it.

And to say that it's fine to use this as long as people maintain standards of courtesy or what-not, or don't drive dangerous machinery, the problem, the contradiction here is, if using it impairs your ability to drive machinery, does not it also impair your ability to make a judgment about whether you should be driving that machinery? And I'd like your reaction to that.

And, finally, I'd like to ask you one basic question. If you were being prepped to undergo serious surgery, and as you're being wheeled into that operating room and you see the doctor who is about to perform the surgery smoking a joint, would you feel real comfortable going into that surgery room with that doctor?

Mr. STROUP. No, of course not, Congressman, and of course I would feel the same way if he was drinking alcohol.

Mr. BARR. Is not the reason because smoking the joint impairs certain mental abilities of the user?

Mr. STROUP. Only during the short time when the individual is intoxicated. It's like alcohol in that regard. I would no more want my airline pilot or my surgeon to be drinking alcohol than I would to be smoking marijuana or using any other psychoactive ingredient as he is preparing to do some serious work where public safety or public health is at risk.

There are lots of medications we take, and certainly millions and millions of Americans, and alcohol is the most common psychoactive drug that we use. They use it to relax, and in very small quantities perhaps any distortion caused by it is modest. But there are far too many——

Mr. COBLE. That's why the use of alcohol in and of itself is not illegal, but the use of it to whatever extent you use it, and it impairs your ability to drive a car and to perceive and react to the world around you, is illegal.

Mr. STROUP. No, but, Congressman, there is no difference between smoking a joint and having a drink of alcohol. A little bit doesn't impair your abilities. A little bit more may.

Mr. BARR. If that doctor is smoking a small joint, would you feel comfortable going in to surgery?

Mr. STROUP. No, I wouldn't want him drinking anything or smoking anything, but we don't arrest adults who use alcohol responsibly because we're worried about our surgeons getting drunk before they operate on us.

Mr. BARR. But if the use of that drug in a certain quantity does impair one's ability, wouldn't the solution be to have you out there railing against alcohol use, not saying, well, alcohol is bad there and marijuana is bad, but since we decriminalize one and not the other, let's decriminalize both of them? That doesn't make sense to me.

Mr. STROUP. Well, I think it depends on whether you're a true conservative, and I suspect that you are. True conservatives do not believe the Government should get into the private areas of our lives, our bedrooms, what books we read——

Mr. BARR. That's not why I object to the use of marijuana. I object to the use of marijuana, and I think it is a legitimate function of our Government to prohibit its use, because I do not believe, and I've seen studies and I've seen it in real life as a prosecutor, I do not believe that a person can smoke marijuana without necessarily having their ability to perceive the world around them and to react to the world around them in a way that doesn't pose a danger to their fellow citizens. I don't care what it does for them.

Mr. STROUP. But I mean, for how long? Forever? You're saying for a few minutes, I assume, the same way alcohol does. I wouldn't want my busdriver to stop the bus and go into a bar and have a beer. That would concern me. Now you may think that that doesn't affect his perceptions, but I don't want him driving if he's been drinking.

So it seems to me that what we need to do is, let's find effective ways to discourage abusive behavior, but don't take away the freedom from the hundreds of millions of adults who don't abuse that.

Mr. BARR. But no matter how much that doctor was smoking, you would not feel comfortable going into that operating room, seeing him take even one puff and inhale marijuana, would you?

Mr. STROUP. I wouldn't want him using any drugs, including alcohol.

Mr. BARR. That's right.

Mr. STROUP. And we're not talking about the right to smoke marijuana when you operate on patients. We're talking about somebody sitting home in the privacy of their own home. In a free society we don't generally have the Government telling us whether we use sugar or nonsugar in our coffee.

Mr. BARR. I've also seen people that use marijuana in their own home, and people that use sugar in their own home, and using sugar in their own home does not cause them to start a fire or to allow a fire to start because they didn't know what was going on around them and see babies die as a result of it, also. I've seen that happen.

Mr. STROUP. But alcohol abuse certainly causes all kinds of varieties of those kinds of tragedies, I'm sorry to say.

Mr. BARR. Well, that's not the question. You're not out there railing against alcohol.

Mr. STROUP. I'm doing my best sitting right here.

Mr. BARR. You're out there railing against the marijuana laws.

Mr. STROUP. But it's because you're not arresting people for alcohol. You are arresting people for——

Mr. BARR. We do arrest them.

Mr. STROUP. Only if they misbehave. We have said in our paper, marijuana smokers who misbehave absolutely must be held accountable. We don't want a double standard, Congressman, we really don't.

Mr. BARR. OK, thank you.

Mr. MCCOLLUM. Than you, Mr. Barr. I guess today we should have had a couple of witnesses dealing with this highly technical area, but there is a wealth of debate, as everybody knows here, whether or not marijuana is addictive from the get-go as opposed to alcohol where you can have a couple of drinks. I know what your answer would be, Mr. Stroup, but I also know there is another side to that argument.

But I'm not asking you that. It's not my time. I'm just commenting on that. I'm trying to be editorially impartial here at this moment, though I'm not impartial, but I'm trying to be.

Ms. Jackson Lee, you're recognized for 5 minutes.

Ms. JACKSON LEE. Thank you very much, Mr. Chairman. And let me say that I am going to make some comments that will apply to the earlier panel, inasmuch as I had several hearings going on at once and was not able to fully question them. And let me qualify my comments by saying I won't fully question this panel. I'm simply going to add some remarks.

First, Mr. Chairman, I'd like unanimous consent to submit an opening statement for the record.

Mr. MCCOLLUM. Without objection.

Ms. JACKSON LEE. Thank you very much.

[The prepared statement of Ms. Jackson Lee follows:]

PREPARED STATEMENT OF HON. SHEILA JACKSON LEE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Thank you, Chairman McCollum, for holding this hearing on marijuana use in America. I would like to thank all of the witnesses for coming to this hearing to discuss this important issue as this Subcommittee reviews the increased use of marijuana by our young people. I welcome all of you, and I look forward to hearing your testimony.

I am troubled by the increased use of drugs in this country, but particularly among our young people. The 1994 National Household Survey on Drug Abuse revealed that while 4 percent of teenagers surveyed in 1992 said they had used marijuana, the number rose to 7.3 percent in 1994. The survey also found that 13 million Americans, roughly 6 percent of all those 12 and older, used illegal drugs. Four out of five drug users smoked marijuana.

Today our children have considerable access to illicit drugs. Eighteen percent of teens reported being approached by someone selling drugs. It is troubling that our youth have such ready access to drugs. Along with the availability of drugs is the disturbing mixed message that we as a society are sending to our youth by perpetuating a culture that makes drug use seem "cool" and glamorous. The problems associated with drug use by children and teenagers are affecting their relationships with their parents and peers and inhibit their ability to learn and succeed in school.

I believe that this hearing is particularly timely, considering the current appropriations debate over the Commerce-Justice Appropriations bill and the Labor, Health and Human Services Appropriations bill, which contain funding for drug prevention and drug treatment programs. A 72 percent funding cut in the Substance Abuse and Mental Health Services Administration would severely impact drug abuse demonstration programs such as the high risk youth demonstration projects, serving 100,000 youths in almost every state, and residential drug abuse treatment programs which currently serve 10,000 women and children. The residential drug use treatment programs have been very effective at reducing dependency and restor-

ing families: with a 40% reduction in welfare rates and with 81% of the participants not being rearrested.

By highlighting the detrimental effect of marijuana use on the lives of our young people, I hope that this hearing will renew the national commitment to our children's future and to America's future.

Once again, I thank the witnesses for taking time out of their schedules to come before this Subcommittee. I look forward to hearing their testimony.

Ms. JACKSON LEE. Let me say to you, Mr. Stroup, that I fully appreciate the first amendment, and so I welcome your presence here. You have the opportunity to speak, and I'm not in any way offended by your presence, and that's what we would hold the Constitution to be. Let me add by saying that I absolutely oppose any legalization of drugs, including marijuana.

There were several points made in a summary memorandum that we received, and let me comment on them, with respect to Ms. Merritt's perspective, because I happen to be a strong opponent of the opposing and opposition of the U.S. Sentencing Commission report dealing with crack cocaine disparity.

Let me add that there is a point. Significantly, according to the U.S. Sentencing Commission, the number of Federal marijuana defendants has dropped from nearly 5,500 in 1993 to less than 4,100 in 1995, a reduction of 18.6 percent. At the same time the average prison sentence imposed for marijuana defendants has dropped from 50 months in 1992 to 43 months in 1995, a reduction of 13 percent. Let me follow that up by saying that another point in this memorandum indicates that the 1992 Adolescent Drug Survey reveals that the average age of first-time users dropped to 13 to 15, from 14 to 17 the year before. The 12- to 13-year-olds are now regularly entering treatment centers, once a rare occurrence.

My point of making those two statements is: so what if the prison terms have dropped? It has absolutely no relevance to the question of utilization by young people. I am absolutely opposed and will do everything that I can to prevent the utilization by young people.

Reasonably, however, I think that we would be totally remiss and irresponsible not to find some testimony legitimate in response to the previous physician, who commented, I believe, and I did not hear all of his testimony so I do not want to misrepresent, about the medical utilization of such. And I'd want to hear testimony because I would not want to be in any position to oppose true medical needs of any citizen who needed to have proper treatment, under prescription, under supervision of a doctor.

But as it relates to young people and the encouraging of utilization, whether it be cigarettes, which I'm opposed to—and, frankly, I'll be the one honest person in here. They have a big lobby. Second, alcohol I'm opposed to. They have a big lobby. We just simply need to be real and truthful. I find that marijuana, and the data will suggest, is addictive, particularly addictive, I might imagine, when it comes to young people.

So my perspective is that what this committee should be dealing with is certainly not to undermine people's constitutional rights, and I would venture to say to you that honest or law-abiding citizens who use marijuana would probably find little attempt for people to come into their house, even though we would make the use of marijuana still illegal, which I support, unless these were sell-

ers, marketers, et cetera. So we know that all of this is going on in people's households, and it only comes to the legal light if they do something outside or criminal, to the extent they become a marketer or seller, do something criminal under the utilization of, or having to do something criminal to get money for purchase of such.

My concern would be, in any of the groups that have come before us, the kinds of efforts that would be used to undermine or to decrease the utilization by these young people and these young minds, who at this stage in their life cannot make independent judgments and independent decisions.

I will be looking and listening further to data that would give me the impetus for further legislation dealing with young people and enhance penalties dealing with those who sell to young people, because I don't believe that we're going to get to the core of this unless we discourage those at these early ages. I think this is criminal and a crisis when we begin to talk about 12- and 13-year-olds in treatment centers, whether it be crack cocaine and, as well, marijuana.

So I would simply offer to the chairman my thanks for this particular hearing and indicate that I think it's clear that we have seen no evidence, at least I have not seen even with this statement, that any drop in prison sentencing has anything to do with helping to increase or decrease utilization by young people. And I hope the U.S. Sentencing Commission will review their data and make responsible recommendations to us, such as a responsibly-made decision to not keep the disparity between crack cocaine and crack. And, of course, this Congress saw fit not to be responsible in their determinations.

As I end, Mr. Stroup, might I just get one response from you? And I hope I pronounced your name correctly, as I was in and out of the meeting. You are against, and I may be putting words in your mouth, but are you against the usage of this drug by underage or young people?

Mr. STROUP. Absolutely, Congresswoman.

Ms. JACKSON LEE. And I thank you for your comments. I know what your position is to adults, and I disagree with that, but, in any event, you have the right to say it, and I will be fighting vigorously to just dismantle any utilization by young people in this country of marijuana or any other kind of drug.

I yield back, and thank you, Mr. Chairman.

Mr. MCCOLLUM. Well, thank you, Ms. Jackson Lee.

I want to thank the panel for coming today. You spent a long time with us and we appreciate it. This hearing is adjourned.

[Whereupon, at 2:20 p.m., the subcommittee adjourned.]

APPENDIX

MATERIAL SUBMITTED FOR THE HEARING

DRUG STRATEGIES

March 6, 1996

The Honorable William McCollum, Chairman
Crime Subcommittee of the Judiciary
207 Cannon House Office Bldg.
Washington, D.C. 20515

The Honorable Charles Schumer, Ranking Minority
Crime Subcommittee of the Judiciary
111 Cannon House Office Bldg.
Washington, D.C. 20515

Dear Congressmen McCollum and Schumer:

At your hearings today on "Marijuana Use in America," two of the opening panel of witnesses testified erroneously that Drug Strategies supports the legalization of drugs. I am writing to set the record straight: Drug Strategies opposes drug legalization and decriminalization. Dr. Eric Voth, one of your witnesses, made the same untounded allegation in a letter to the *Wall Street Journal* last month. I have attached copies of his letter as well as my response which the *Journal* published on February 28, 1996.

Drug Strategies is a non-profit policy institute committed to developing and promoting more effective approaches to the nation's drug problems. It has attracted grants from major national foundations, including the Carnegie Corporation of New York, the Edna McConnell Clark Foundation, the John D. and Catherine T. MacArthur Foundation, the Open Society Institute, the Robert Wood Johnson Foundation, and Spencer Foundation. We are collaborating on various projects to reduce the demand for drugs with the Police Foundation, the National Association of Broadcasters, the American Bar Association, the American Academy of Arts and Sciences, the Council on Foreign Relations and Peter D. Hart Research Associates.

I would appreciate your printing this letter and my attached letter to the *Wall Street Journal* as part of the record of your hearing on "Marijuana Use in America" so that the public will not be misled by erroneous characterizations of Drug Strategies.

Sincerely,

Mathea Falco

Mathea Falco

cc: Neil Goldschmidt, Esq.

Officers:

Neil Goldschmidt
Former Governor of Oregon
Chair

Dr. Margaret Hamburg
Commissioner of Health
New York City
Vice Chair

Mathea Falco
President

Directors:

Dr. Michael Crichton
Author

Marian Wright Edelman
President
Children's Defense Fund

Dr. Pedro José Greer
University of Miami
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Dr. Dean Jamison
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Rim Studies UCLA

Robert McNamara
Former President
World Bank

Dr. Robert Millman
New York Hospital
Cornell Medical Center

Norval Morris
University of Chicago
Law School

Howard Pruntz
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(Wall Street Journal--Feb. 23, 1996)

Some Bad Vibes In the Drug Debate

While Dr. Rachel Ehrenfeld and Wayne Roques (editorial page, Feb. 7) do not make any direct reference toward Mathea Falco supporting the legalization of drugs, she has responded with personal invective (Letters, Feb. 8).

Ms. Falco's history dates well back into the Carter administration when she was a close associate with the admitted cocaine abuser Dr. Peter Bourne. In a pamphlet from March 1976 on marijuana published by the Drug Abuse Council, Ms. Falco was supportive of marijuana decriminalization. Several authors, including Patrick Anderson, the author of "High in America," discuss how Dr. Bourne and Ms. Falco helped a new generation of drug smokers and political activists come to power.

While Ms. Falco has publicly stated her current opposition to legalization of drugs, it is impossible to discern her current support for pseudo-legalization activities such as decriminalization of drugs (especially marijuana), medicalization strategies and general softening of drug policy. I am encouraged that she now so strongly states opposition to decriminalization since that stance has been difficult, if not impossible, to clarify. Her recent positions, however, have clearly opposed international interdiction efforts, and have criticized efforts to maintain strong interdiction against drugs. In her book, Ms. Falco quotes, and even acknowledges, several individuals who consistently support soft drug policy or legalization.

I started trying as early as February 1993 to clarify Ms. Falco's position on various drug-related issues. She never responded. Recently, Drug Watch International attempted to clarify her stance, but instead received only noncommittal, vague commentaries from her Drug Strategies chairman, Neil Goldschmidt.

One fact remains absolutely clear: Mathea Falco's organization has received at least $3 million from the billionaire George Soros. This has been part of his triad of contributions that include the Drug Policy Foundation and the Lindesmith Center. These latter two organizations openly and repeatedly support full legalization of drugs.

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Letters to the Editor

Drug Legalization Is Not the Answer

Several Letters to the Editor (Feb. 21 and 23) have seriously misrepresented my position on drug legalization. My book "The Making of a Drug-Free America: Programs that Work" sets forth in detail why legalization is not the answer. I believe it would have catastrophic consequences for our society. The vast majority of voters agree, according to numerous polls. The National Review's endorsement of legalization—long supported by such noted conservatives as William Buckley Jr., and Milton Friedman—has further polarized the already contentious debate. Unfortunately, the ideological invective obscures the central question: What have we learned about what works to combat drug abuse?

Both Republican and Democratic administrations during the past 20 years have concentrated on trying to curtail the supply of illegal drugs, at a cost of more than $100 billion. As assistant secretary of state for International Narcotics Matters, 1977 to 1981, I developed programs intended to cut drug production and trafficking in major source countries, primarily Latin America and Southeast Asia. Since then, Congress has greatly expanded these programs as well as efforts to intercept drugs in transit. Studies by the GAO and Rand question the effectiveness of these initiatives. In January 1996, Gen. Barry McCaffrey, President Clinton's new drug czar, who was then commander of the Southern Command, said U.S.-assisted counter-drug programs in Latin America, including the arrests of the Cali cartel, have not made a difference and that new ideas are needed. In the past decade, world-wide opium and coca production have doubled; heroin and cocaine availability and purity in this country are now at an all-time high, according to DEA Administrator Thomas Constantine.

The U.S. can play an important role in helping other countries combat the drug cartels that undermine their governments and economies. But any lasting answers to our own drug problems lie here at home, in our families, schools and communities. Law enforcement is critical, particularly at the local level where citizens organize to drive out dealers. Prevention and treatment are even more urgently needed: Four out of five police chiefs in a recent poll rank drug and alcohol abuse as the top problems in their communities.

More than half the nation's 1.5 million prison inmates have serious drug habits, yet treatment is available for less than 10% of them. Studies have found that sustained, rigorous programs like Phoenix House can reduce recidivism by half. This year, Congress slashed Mr. Clinton's request for expanded prison treatment programs and eliminated funding for drug courts, which divert low-level drug offenders from costly prison cells to court-supervised drug treatment. In many communities, treatment remains scarce, even though it is pivotal in reducing crime and violence.

Since 1991, marijuana use among eighth graders has more than doubled. The painful lessons of the past must be learned by each new generation. Yet Congress has cut drug prevention funds by half, while considering substantial increases in overseas interdiction efforts.

The legalization debate should not distract us from the urgent need to build on what we know. Drug Strategies, a nonprofit policy institute I established in 1993 with support from eight major foundations, is committed to finding more effective approaches to the nation's drug problems. Legalization is not the answer to any of these problems.

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Washington

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